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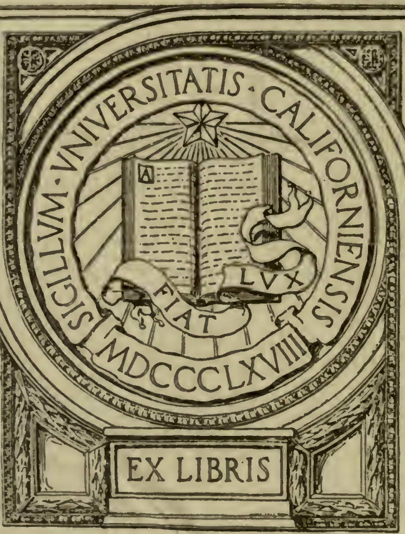
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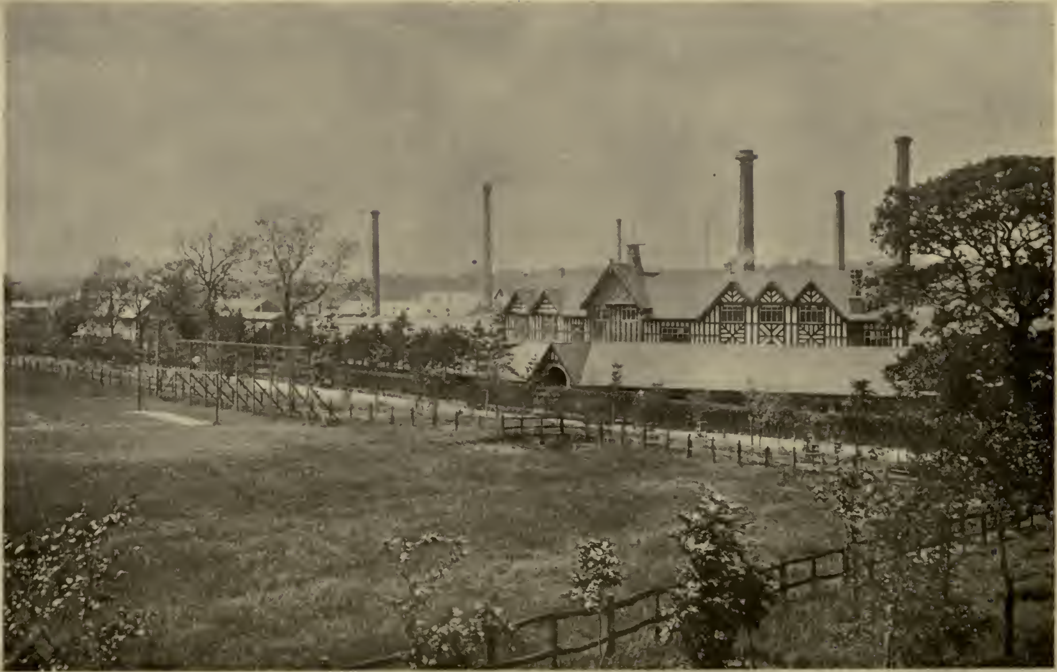

THE CADBURY COCOA WORKS, BOURNVILLE.

MODEL FACTORIES AND VILLAGES:

IDEAL CONDITIONS OF LABOUR AND HOUSING

BY

BUDGETT MEAKIN

LECTURER ON INDUSTRIAL BETTERMENT
AND AUTHOR OF
"THE MOORS," "THE LAND OF THE MOORS,"
"THE MOORISH EMPIRE," ETC.

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TO

THE FRIEND

WHO RENDERED POSSIBLE THE COLLECTION

OF THE FACTS WHICH IT CONTAINS,

THIS VOLUME IS AFFECTIONATELY

DEDICATED.

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PREFACE

IN the following pages are set forth practical examples of what successful business men have found it worth while doing to promote the moral and social welfare of their employees, in the hope of provoking others to like good works. The various industrial betterment schemes described are not advanced as theoretical recommendations, or as the creations of the philanthropist, but as the actual experience of money-making men.

Each business has so far its own peculiarities and possibilities that it would be impracticable, as well as impertinent, for an outsider to urge this or that step on any particular firm. Those employers into whose hands this volume may fall can themselves be the only judges as to which of the ideal conditions described it may be possible for them to secure for their employees. But all may recognize and act upon the principle which underlies the whole.

The book might have been rendered more readable had the various institutions been described *currente calamo*, without referring to the numerous firms which had established them, but this would not have appealed with equal force to other employers, often engaged in the same class of business. Definite instances have therefore been quoted throughout, not with any attempt to enumerate all, which would have been impossible, but to give sufficient examples from different trades to prove the practicability of each ideal. These include the most prominent which have come under the writer's observation, directly or indirectly, during his investigations, which have extended to Germany, Holland, France, and the United States, as well as Great Britain and Ireland. Wherever possible a visit has been paid to the works concerned.

At the same time the author desires to express his special obligation to Prof. N. P. Gilman's "Dividend to Labor," full of information on the subject, and to the American Institute of Social Service for its publications, as well as for introductions to some of the establishments visited in the United States. In both cases, however, he has often found himself drawing on the same original reports as they, but in a work of this nature it is felt that references would be superfluous, as any fact can be verified by application direct to the firm concerned. He would receive with great pleasure particulars of any further methods of industrial betterment, or of important instances of those described, of which he hopes later to make good use, and he would willingly correspond with any firms desirous of following the examples set forth. The absence of reference to several English instances of which the writer has heard, but has been unable to visit, is due to no reply having been received to inquiries by letter, or only a curt refusal to give information. This, however, is typical of English firms.

Railway companies, which have to a great extent realized and effectively discharged their social obligations to their employees, at all events at their principal works, have for the most part been left out of consideration, though there are points on which even they might do well to gather the experience of smaller concerns such as here described. Some may expect references to the famous Familistère at Guise, but this is so unique an institution, differing so widely in all its conditions from the ordinary factory, that as it is well known, examples have not been drawn from this source.[1] Where, to avoid prolixity, the name of a firm repeatedly occurring has been given baldly, the full name and address will be found in the index, together with number employed, when known.

Apart from the opinions expressed, for which the author is alone responsible, the facts set forth afford an example from one department of the information which is being collected and disseminated by the British Institute of Social Service, to which, as the nucleus of its library at 11, Southampton Row, London, W.C., has been presented all the material employed in this volume not derived from the author's note-books, and to which also any further material received will be contributed.

21, Heath Hurst Road, Hampstead.
April, 1905.

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[1] See "Twenty Years of Co-partnership at Guise," published by the Labour Co-partnership Association, 15, Southampton Row, London, W.C., at a shilling.

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"*Why should we not frankly say: The housing question is our question; healthy conditions in workshops and factories are our concern; a living wage, reasonable hours of labour, provision of work for the unemployed, harmonious relations between landlord and tenant, between capital and labour, between master and employee, are our interest?*

"*These things touch us because they touch Christ.*"

R. F. HORTON.

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INTRODUCTION

Old-time Conditions.

TIME was when handicrafts were carried on in work-shops adjoining the employer's home, often that of the apprentices as well; the interests of masters and men were understood to be identical, and a common family life often led to family ties. Each worker carrying through his job from start to finish, he might become an artist as well as a craftsman; his character revealed itself in what his hands fashioned, and he loved his task. Good workmanship was at a premium, and the skilful craftsman could look forward to a competency in old age. None needed to starve who knew his trade, and would devote himself to it, and the many calls on his talent fitted him to turn from one branch or allied trade to another as occasion demanded or work fell off. But those were days of whole-hearted toil, early and late, on simple fare, in simple quarters, with few of the advantages common to-day. It was not even then "all beer and skittles," and the workmen of those days would open envious eyes at some of the modern conditions of labour, especially at the style of living and the educational facilities, but in the separation between masters and men, and in their consequent loss of sympathy, it is a question whether we have not lost more than we have gained.

It is the introduction of steam which has wrought the change: it has placed immense resources of concentrated power in the hands of capital, and has enabled it, with the assistance of capable management, to command the service of countless drudges. Little by little, as the machine has been perfected, the man has been driven back, till, although new trades employing the more highly skilled have been called into being, the rank and file have been reduced to a routine of uninteresting, perfunctory motions, feeding and tending the whirring monsters. It was at first feared that the result would be large numbers cast hopelessly out of employment, but it has not been so. Those unable to adapt themselves to the changed conditions have indeed suffered, but the immense reduction in the cost of articles so produced has proportionately increased the output, so that no ultimate loss of work has resulted.

Effects of Industrial Revolution.

The real changes that have taken place have been the concentration of industries, and consequently of population, thus inducing all the evils of over-crowding, which could so easily have been prevented by foresight; and the increased proportion of unskilled labour, owing to the ease with which the untrained have been able to secure employment at busy times, to be displaced when work was scarce. Another result is the loss of touch between master and servant; this is the greatest evil of all, since it enables one section of the community to reap an income by the labour of another of whose circumstances it knows little or nothing. The consciences of the employers, already lulled by easily-purchased luxury, are not awakened by the cruel lot, the dire necessities, of those on whom they depend to supply that luxury. The investing class has degenerated to a parasitical dependence on workers with whom it thinks it has no concern. The widening breach breeds illwill, agitation, and social trouble, increasing every day. The workman, mistakenly regarded as a machine, or as an adjunct to a machine, gets to regard his employer—whom in many cases he never sees—as an enemy, an oppressor grinding out the most in labour for the least in money. This idea, too often well founded, leads to bad workmanship, and to the least possible return for the wage.

Common Interest of Capital and Labour.

Nothing could be more unsound in principle, less economical in practice. There is no conflict between the real interests of employer and employed; they are identical, and the experience of employers who have recognized this is unanimous. It is the mistake made by so many employers and so many employed, in supposing that either can in any way advance their interests to the disadvantage of the other, and in consequence trying to "get the better" of one another, which has brought about the conflicts we all deplore. Success is not to be measured by the extent of the plunder, and those who have defrauded most are least to be envied. Mistaken interests may clash, but the real interest of both parties is identical, and the sooner this is realized the better for all concerned. Just in proportion as this becomes the case may we hope to see the machine of which both are essential parts working smoothly, steadily, and without waste. That it is possible for capital and labour to be represented in the same individuals—showing how identical are the interests of both—is evidenced by the existence of co-operative productive concerns, and of those in which the thrifty workmen have become the owners of shares.

Mutual Protection.

Mutual protection of each other's interests is therefore incumbent on both employed and employer, if the common object of increased returns all round is to be achieved. Care for the interest of the employer implies good workmanship and diligent service to assist in lowering the cost of production and facilitating distribution, so that more may be employed, and better conditions of labour secured. Care for the welfare of the workpeople secures improved relations and a minimum of friction, resulting ultimately in an improvement of the products, and in an increased output. A better class of workpeople is attracted, and the general standard is raised, to the eminent satisfaction of all. Every one feels the result of harmonious working, and an *esprit de corps* is created, fatal to agitation and strikes, affecting even the salesmen on the road, who place more goods in consequence.

In the words of the Reeves Engine Company of Trenton, New Jersey, the policy of which is to provide the very best conditions possible for its workmen, "We can get a better grade of men, who are able to do finer work and more of it, by following this course. Our motto is, 'Big Wages, healthy conditions to work under, and big production.'" The Sherwin-Williams Company, who provide ideal conditions for their workers in fourteen factories, one of them in this country, say, "The three most important matters for attention should be health, morals, and education; because a vigorous employee can do more work, a conscientious employee will do more conscientious work, and a more intelligent employee will do more intelligent work." "It is interesting to note," says Mr. Weston, of Newark, "how frequently the health of employees, and the requirements of business, are best served by identical conditions."

In comparing results it is at once observed that the most successful experiments are those which have grown with the growth of the firm; indeed, many are confident that without the hearty co-operation of their workpeople they would never have made the headway which they have. Those who think that it will be time to begin when they have made a fortune for themselves will never begin, for the insidious grasp of wealth will stifle their souls. Those who have from the outset shared their prosperity with their employees because they feared God, thank God daily for the result; those who see in this the working out of an economic law, a law of Nature which they call not God, have no less reason to be satisfied with the experiment. This is not, as some imagine, a new movement, for it has existed from the first days of the new manufacturing era, wherever employers have realized their responsibility and done their duty. What is new is the awakening of the industrial world generally to the important bearing improved conditions of labour have upon the businesses adopting them, and the consequent rapid spread of the idea.

Importance of Social Conditions.

But however great an effect may be produced by merely improving the material conditions of factory life, the best results are only to be achieved by improving its social conditions, the nature of the relations between employer and employed, as well as among the employed themselves. Those who have been most successful in this feel as though they had made the least effort and expended least, because they have only done, step by step, what close acquaintance with the circumstances of their "hands," and a real interest in them, have prompted. The problem of to-day is rendered much more difficult by the distance generally separating the homes of the two classes. Where the employer lives amid his people, his family within reach of their families, influenced by their needs, and knowing their condition at first hand, there is a possibility of mutual relations not otherwise to be obtained.

The Personal Touch.

"We just live here," was the sufficient explanation offered to the writer by a member of the Cheney family—whose silk mills at South Manchester, Connecticut, employ three thousand hands housed amid ideal surroundings,[1]—when questioned as to the secret of the successful relations between them. During the long history of the firm there had been but one strike, and that only to protest against certain dismissals, and a pleasant air of family life prevailed. "We are not philanthropists," the speaker continued, "we are just business men, and we just live here." Another successful American instance of many that might be noticed, is that of Messrs. Whitin, of Whitinsville, Massachusetts, whose homes stand opposite the huge machine factory, surrounded by the comfortable homes of the workers, let to them at about a tenth of their wages.[1] There I was informed that when an agitator came along he was referred to "the boss, who makes us too comfortable."

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[1] Described in Part II. of this volume.

Much the same might be said of the Fairbanks Scale Company, of St. Johnsbury, Vermont, where also generations of workmen have served generations of masters, the first of whom inaugurated the existing good-will by saying to his men, "You should come to me as to a father," and whose sons had all to work in the shops till they knew their business. An excellent instance of the right spirit is evinced by a letter to his employees from Colonel Kilbourne, of the Kilbourne and Jacobs Manufacturing Company, of Columbus, Ohio: "Next to the affection of my wife and children, what I most desire is the confidence and esteem of you, my co-workers, and if I can retain that during my few remaining years I can hope to be with you, I shall be well satisfied, whatever may befall me. We have all of us, you and I, occasion to be thankful that while elsewhere in many places there has been in the past year dissension and strife between employers and employees, causing loss and disaster to both, here in these shops, yours and ours, we have continued the same peaceful and friendly relations that have so long existed."

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[1] Described in Part II. of this volume.

A similar experience is that of Messrs. Proctor and Gamble, of Ivorydale, near Cincinnati, with whom strikes and other labour troubles have become things of the past since they introduced profit-sharing, and in many other ways began to care for their employees. "We believe that it would be impossible to foment any such trouble among them now," they declare. "On several occasions some troublesome fellow has tried to produce dissatisfaction. The men themselves have gone to the foreman with details of the attempt, and suggestions that the disturber be discharged."

"Now, as formerly," writes M. Maistre, of the cloth-works at Villeneuvette, in France, described as for a century and a half "a home of industrial peace," "what is asked by the working man is not so much a high rate of wages, as security for the future. The best way to give security to the working man is to live with him." France has many instances of this, with the result that outside its great cities where other conditions prevail, there is perhaps as little industrial unrest there as anywhere.

The members of the Harmel family, whose homes are close to those of the workers at Warmériville, do not leave the place for the summer holidays, as is so often the custom, for, to quote one of them, "our scheme simply will not work unless we live our lives and find our pleasures here." One of the daughters expressed herself to a visitor as never so happy as when "among her own people," in whom she included "the working men and women for whose weal she spent a portion every day." So successful have the methods of M. Léon Harmel proved in promoting this family feeling, and in securing industrial peace, that he has been instrumental in forming an association among employers interested in following his example. Two textile industries, at Watten and Tourcoing respectively, and coal mines near Lyons employing eight thousand men, have already done so.

In Holland the most conspicuous house in the cooperative village of Agneta Park is that of Mr. Van Marken, the founder and also the employer, who makes a point of never seeing a man who reels past his windows at night, but who is nevertheless in close sympathetic touch with his men. "It seems to me," he writes, "the duty of an employer to aid his subordinates by every means at his command—his heart, his intellect, his money—to attain that highest stage which alone makes life worth living. My own conviction is that in doing so the employer will make no sacrifice. But if he needs must make them, be it from the material or moral point of view, let him make them up to the limits of his capacity. It is his sacred duty." He states that his industrial betterment schemes are not the outcome, but one of the main causes, of the prosperity of his business. "The money spent on them is not thrown away, but placed at a high rate of interest." A most important point is emphasised by Herr Schlittgen, head of the

Marienhütte Iron Works, who says "What is given to the work-people should not be given with condescension; the *manner* in which it is given is of consequence: human sympathy should plainly appear."

Of the instances which might be quoted from our own land is that of Mr. Boden, of Derby, whose factory is within a few moments' walk of his house. After describing the care taken of the workpeople by the proprietor and his wife, who were continually on the spot, and were personally acquainted with their employees, the Earl of Meath goes on to say in his "Social Aims," "The constant communication between employer and employed I believe to have been in no small measure the cause of the happy relations which evidently existed between them, and it would be well if such mutual personal knowledge were more common than it is." "All of us are working directors on the spot," said a member of the Nottingham firm of Thos. Adams and Co. to the writer, "so we must take an interest in the welfare of our people; we cannot avoid it."

But where, owing to the number employed, such direct relationships have become no longer possible, much may be done to restore them indirectly, especially if it be made the duty of one member of the firm to study the social conditions of those employed, just as another may give special attention to the machinery or to any other distinct department. In short, it is essential in such a case, if not in every case, to recognize the social department as of first importance, and to give it adequate attention. Where the size of the business demands it, there should be a special Secretary or Manager, of whose duties and opportunities more will be said later.

Even with such skilled assistance the heads of the business cannot afford to neglect the social department any more than the producing or sales department, though they may be relieved of the details of all. "Success or failure in this kind of work," says Mr. H. H. Vreeland, President of the New York City Railway Company, who has himself risen from the ranks, "depends almost entirely on the extent of active interest taken in it by the man in control of the business." A kindred company, having copied the social organization of his concern, met with complete failure in its efforts. They had started with a great "hurrah," president and officials there for the first and last time. "Now they have a secretary, as I have a secretary," continues Mr. Vreeland, "but that secretary's work was not personally assisted by any one in the management of the Company. In nine years I had never let a meeting pass without my being on the platform to speak to the men, unless it was through illness, in addition to which every vice-president and every head of every department of our Company was also present. I was ill one night, and when I looked over the list of those who were in attendance (it was known that I was going to be away), I found there was not a representative man of our railroad company that attended that meeting. Every one of them explained afterwards that he had an engagement. It never occurred again. The whole management is interested in the work. You can go into our club-room, and in that seat there you will find five motor-men and five conductors, with one of the vice-presidents ; in this seat here are half a dozen engineers and machinists, and a superintendent of transportation ; here the head of the electrical department ; and there the head of the mechanical department ; every one of our people is in touch with the men."

In the Sherwin-Williams Works the president, vice-president, and all the members of the Company, meet with the employees about once a week, when papers are read by the latter, including the workmen. Such social gatherings must go a long way towards securing ideal conditions of labour.

A Word of Warning.

In urging the introduction of these conditions wherever possible, there is, however, one danger against which too strong a warning cannot be uttered, the danger of substituting paternalism for fraternalism. What the workers need is not to be hurriedly coerced on to a higher level by a stronger power, but to be led up to it gradually by the hand of a brother, albeit that of a master. Paternalistic efforts are bound to fail in time, and always induce criticism and dissatisfaction. Self-interest is then charged to the management, and ingratitude to the workers.

The development of the institutions commended must also be the result of fostered growth, not of forced creation. Mr. C. E. Adams, Vice-President of the Cleveland Hardware Co., has well expressed this point in summarizing the efforts of his own firm : " From our experience we believe that it is policy to encourage the men to start and conduct these things themselves. There seems to be always a little suspicion on the part of the employees when the officers of the company take any undue interest in them, and we believe that all things should be started very gradually, that the men should run them by themselves, and assistance be given in response to requests from them rather than by advances made to them."

This of course applies only to concerns in which there is much lost time to make up, in which a sudden reversal of the normal policy of neglect is sufficient to justify suspicion. It must never be forgotten that the right time to introduce ideal conditions of labour is when the first "hand" is engaged, whether a mate at the bench or a maid in the house. Brotherly and sisterly feeling can then be expressed without fear of misunderstanding, and as opportunities for mutual service arise they will be availed of naturally. But no improvements of environment or personal kindness will suffice without adequate remuneration for services rendered, based on reasonable requirements. The conditions of labour, to be ideal, must be fair all round, including those which it is possible to adjust by bargaining, such as time and wage, and they must also include an honest return on the part of the worker.

Speaking from their own experience, the Ludlow Manufacturing Associates of Massachusetts have recorded valuable advice on the matter. "Social betterment," they say, alluding to that of employees by their employers, "to be successful must be free of any suspicion that it is designed to take the place of wages; second, it must not be too paternal, or suggest that the recipient of its benefits does not know how to obtain them himself; third, the ideals aimed at must not be too far removed from actual conditions; fourth, as far as possible, and continually more and more, the people should assume the management."

"We have found," says Mr. Humphreys, of the Patton Paint Company, Milwaukee, "that the chief benefit, to the firm and to the employees, is in helping them to help themselves. It is a maxim that what a man does for himself is worth four times as much as anything done for him, and that every man is of value chiefly as he develops himself, and as he is allowed and helped to make the most of himself. This is what we have had in mind, and have tried to carry out in all our welfare work."

This experience applies to almost every form of "welfare institution" in warehouse or factory, office or mine. Whatever may be carried out during the life of a generous principal without the co-operation of his employees in its management and maintenance, will not only fall off when he is gone, but even in his lifetime will come short of its possibilities. One has only to glance at the records of Saltaire or Pullman, and especially those of many French and German examples, to see the force of this, but the way in which one French Company, MM. Jules Chagot et Cie, of the Blanzy Coal Mine near Antun (Saône et Loire), utilized their experience in this respect is most instructive.

Finding that their old-established "patronal institutions" failed to develop the personal initiative of the workmen, who were called on neither to support nor direct them, and therefore took no interest in them, MM. Chagot decided to revise their methods. They proceeded to establish some sixty institutions of which the administration is almost entirely in the hands of the workpeople. "It was a veritable education that had to be given . . . and they have rapidly acquired it. Instead of lazily accepting the institutions devised for their benefit as their right, they learned to count on themselves, and to appreciate the liberality of the company in co-operating with them." The extent of this liberality may be gathered from the fact that in addition to supplying its 8,000 men with £20,000 worth of free coal every year, providing half the pension fund, and furnishing accommodation for the numerous institutions free of charge, the Company contributes annually some £800 towards their expenses. The National Cash Register Company finds it possible to trust even the boys in a club—to the number of sixty or more—to manage their own internal affairs, order being kept on club nights by a "sergeant-at-arms" of their own choosing; one can well imagine the satisfactory results as the youngsters develop.

Effect on Workers.

As for the ultimate effect on the workers of the improved conditions advocated, let Mr. Seebohm Rowntree, also an employer, speak with the same authority of experience: "Probably much more beneficial influence upon the character of the working classes may be exercised through the medium of their places of employment than is at present exercised by the churches." And further, after dwelling on the influence of school life upon the nation, "The tone in factories and shops is an equally important factor in moulding the characters of those employed in them."

A recognition of the important bearing of these facts on commercial prosperity has led the Cleveland Chamber of Commerce to make the improvement of labour conditions in the concerns of its members a special branch of its operations. To this end it has established an Industrial Betterment Department, under the care of a secretary whose duty it is to acquaint himself with whatever employers elsewhere find it worth while doing for the benefit of their employees, and to bring before the notice of members any measure likely to prove suitable in their special lines.[1] The result has been to put Cleveland in the front rank of American cities in this respect, if not throughout the world, and there can be no doubt that it will benefit proportionately. Similar action is most heartily commended to our English Chambers of Commerce and kindred bodies.

The Bureau of Statistics of New Jersey has also set a good example by issuing a circular of enquiry to two thousand of the leading firms of that State, seventy-five of the replies to which reported "welfare institutions" of some sort among their employees; chiefly, however, pension or profit-sharing schemes, but including many excellent examples of ideal factory conditions. "Without exception, all concerned express the highest degree of satisfaction with the results thus far accomplished."[1] Last year, too, a conference on "welfare work," consisting of employers or their representatives from all parts of the United States, was summoned in New York by the National Civic Federation, at which much valuable information was exchanged, and afterwards embodied in an illustrated report.[2] All this shows that the movement to secure more favourable conditions of labour is not only "in the air," but has laid hold of prominent employers to an extent which means that those who scorn it will get left in the race.

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[1] The Cleveland Chamber of Commerce has published an illustrated report of what its members are doing.

This point is emphasized by the conclusion of Mr. W. T. Stead that: "The business prizes of the future will go to the ablest generals, and the ablest business general will be the man who most commands the enthusiasm and confidence of his employees, and who knows best how to draw into the working of his concern the latent talent and the diversified ingenuity which every large body of workers does certainly possess."

Who is responsible?

It is, however, of the utmost importance to remember that every holder of a share in a business is directly responsible for the conditions under which his dividends are earned. Much of the modern industrial trouble arises from the fact that the proprietors of inhumanely-conducted businesses are scattered through-

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[1] Embodied in a Report to the Department of Social Economy of the St. Louis Exhibition of 1904.

[2] Published by the Federation, 281, Fourth Avenue, New York.

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out the country, living at ease on their dividends, utterly indifferent as to the manner in which they were earned. It is necessary to bring home to such the real position in which they stand, and its responsibilities. "Evil is wrought by want of thought as well as by want of heart," says Hood, and there are many thousands of well-meaning people among us on whose head lies the sin of industrial oppression, who only need to be informed to rise up and put an end to it.

But they are not alone in deserving blame. Every consumer of articles produced by underpaid labour, or under unhealthy conditions, is abetting robbery and sharing the spoils. This is a truth which cannot be too widely made known or too strongly impressed on the public conscience. Nothing is cheap of which part of the cost has been paid by others in wasted energy and lowered morals; the payment of a portion only of the real value is a fraud on the part of the purchaser, tempting employers to withhold more and more of the price, in order that they may successfully compete with others in offering plunder to their customers without loss to themselves. Even when adequate wages are paid, and the working conditions are bad, the responsibility is not less, and it behoves us to become informed as to both wages and conditions.

The difficulties in the case of the consumer are much greater than in that of the manufacturer or shareholder, and they will only be overcome by the establishment of a widely supported Consumers' League, such as already exists in America, certifying goods produced under fair conditions.[1] The introduction of trade union labels is a step in the right direction, and they should be demanded wherever possible, but there are many industries to which they are not yet applicable. Also, as representing demands made by the worker which many feel to be incompatible with their own interests, they can hardly become generally acceptable till the trade unions have all grown reasonable, and confine their action to whatever will promote the common interests of employer and employed. Till then, to secure the best conditions, a corresponding effort must be made on undebateable grounds which will appeal to all, and this can only arise out of the awakened conscience of the consumer. Much has been said, and much more remains to be said, as to existing evil conditions which it is our duty as consumers to combat, but these pages are of necessity restricted to setting forth ideals such as it should be our immediate effort to bring about, since they may already be seen in successful practice.

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[1] Such a League the writer is most desirous of seeing established in this country, and he would be very glad to hear from others interested in the same object.

PART I

CONDITIONS OF LABOUR

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I. SOCIAL RELATIONS

Social Secretaries.

REFERENCE has already been made to the root-cause of most of the trouble which to-day distracts the industrial world, the loss of touch between employer and employed, which has resulted in a widening breach, and the mistaken supposition that the interests of these two classes are at variance. The conditions of labour only become ideal in proportion as this loss of touch is restored, and personal care is exercised by those in authority. Without it the best of material conditions fail, and this is generally the reason when industrial betterment efforts are unsuccessful. In our huge modern concerns, however, this care becomes impossible for busy heads, so that, as previously said, the office of "Social Secretary" has been devised, and has been found most satisfactory.

The appointment of a Social Secretary where possible is one of those new methods for meeting new needs for the suggestion of which we are indebted to the American Institute of Social Service (then the League for Social Service). It was first adopted in 1889, and met with such acceptance in the States, that four years afterwards it was possible to hold a conference of Social Secretaries. These are just as much needed in our large business houses as in factories, and in the United States the "department stores" afford them fine scope. As an alternative designation, somewhat wider in scope, some prefer that of "Welfare Manager," the duties of such being described most appropriately as "Welfare Work." Whatever the precise nature of those duties, however, it is important that an official position of some sort, unconnected with actual oversight or control, should be attached to this post.

Engagement of Workers.

One of the simplest methods is for the engagement of new workers to be in the hands of the Social Secretary—man or woman as the case may be—who thus becomes acquainted with the newcomer's circumstances and needs, and can thereafter render such friendly advice and assistance as may be required. The advantages of such a system are manifest, in engaging girls especially so, and by it undesirable characters of both sexes are excluded.

The method usually adopted is for the foreman or forewoman of the department requiring additional workers, or the superintendent of the work that is short-handed, to give notice of the fact to the manager, who, on deciding to engage additional hands, instructs the Social Secretary, by whom applicants are seen, those most likely to suit being sent forward to interview the foreman or superintendent, who has to be satisfied as to their qualifications; if these suffice, the engagement is made by the Social Secretary, through whom also notice of dismissal must come, enabling him sometimes to bespeak a further trial, perhaps in some more suitable department, or at least to see what can be done for the one dismissed, to whom, if necessary, on the foreman's report, he gives a written character.

In the National Cash Register Works the foremen are permitted to make recommendations if they know of anyone suitable for the vacant post, perhaps already engaged on the premises, but they are prohibited from recommending personal acquaintances or relatives. Similar regulations apply to heads of departments nominating foremen or assistants. The actual engagement is there in the hands of an employment department, which sifts all applications, and passes on those selected to the foremen for approval.

ONE OF MESSRS. ROWNTREE'S SOCIAL SECRETARIES
ENGAGING A NEW "HAND."

At the Brown Hoisting Machinery Works in Cleveland, where numbers are sometimes engaged at once, there is a special office for this purpose, with its waiting-room; candidates entering the office by one door and leaving it by another, so that after the interview they are not seen again by those waiting.

Duties of Social Secretaries.

The engagement of new hands is, however, only an incidental duty of the Social Secretary, entrusted to him or to her as a means of furthering the real objects of the appointment. The main duty is to study the welfare of employees in every way, to suggest improvements in factory conditions, and to take in hand the organization of clubs and social enterprises. At the same time he or she becomes a kind of link between employer and employed, preventing friction and removing difficulties. Capably filled, the post is one requiring no slight qualifications, and, from the results achieved, worth a substantial salary. In works too small to require the entire services of one person, the duties can be combined with those, say, of private secretary, while where a firm consists of several members, one may well devote himself to these duties. But if a Welfare Manager be engaged, he or she must have the fullest confidence of the heads of the concern, in following out a well-defined policy, or the position will be wasted; and it is equally essential that the confidence of the workers also shall be secured.

In our own land Messrs. Rowntree, of York, in 1891 engaged a lady Social Secretary to look after the interests of the women and girls in their employ.

The results of this step proved so satisfactory that later on a University man of experience, an M.A., was engaged to perform a like service for the men, and is at present supported by an assistant and two visitors, while his lady colleague has four assistants, all with special experience of social work, often in connection with settlements. The following quotations are from a valuable report of the work under their direction, summarizing their duties.

"As the representatives of the Directors, the Social Secretaries are expected to suggest and advise any improvements in conditions of work, etc., that may be helpful, to initiate and control extensions of social work, and to assist in keeping the personal element prominent in their relations with the employees.

"As the representatives of the employees, it is the duty of the Social Secretaries to be constantly in touch with them, to gain their confidence, to voice any grievances they may have, either individually or collectively; to give effect to any reasonable desire they may show for recreative clubs, educational classes, etc.; and to give advice and assistance in matters affecting them personally or privately."

Their specific duties include the engagement of employees other than skilled workmen and clerks, the suggestion of improvements in the terms and conditions of employment, etc., the supervision of dining-rooms and dinner-hour arrangements; the visitation of the sick and other absentees; the initiation and supervision of clubs, societies, etc., for the benefit of employees, when such are not independently successful — all being self-governed

—and the fostering generally of a spirit of unity and good fellowship amongst all connected with the firm. In short, "it is the aim of the Social Secretaries to make employees feel that they are more than mere parts of an industrial machine; that some one in the factory cares for them as human beings—cares whether they get on well, whether they behave ill or well."

Inspection of Wages.

This care shows itself nowhere more practically than in the action taken by this firm when the weekly wages return shows that any individual's earnings at piece-work have fallen below the minimum standard. Such a case is at once inquired into to ascertain whether the task allotted is an unsuitable one, and if so a transfer is, if possible, effected; or whether a little advice and encouragement would bring about an improvement. "There are many employees working upon 'piece,' who, for want of encouragement or help, or stimulation of some kind, will go on working year after year, earning a comparatively low wage, although perfectly capable of earning a higher wage . . . without any alteration in the piece rate. In our own case," say Messrs. Rowntree, "there is no doubt that the systematic inspection of wages has resulted in a considerable increase in the average wage earned per employee, and consequently there has been greater satisfaction among the workers. At the same time, of course, it pays the manufacturer to get as much work from each employee per hour as possible. For instance, assuming the rate of piece wage to be the same, it pays him better to have two employees earning 30s. weekly, independent of overtime, than three earning 20s. each. . . . The organization of the factory should be such that every employee who enters it has the opportunity of doing the best he can for himself, and therefore for the firm." Such words, the outcome of such experience, ought to carry great weight.

In Holland the Van Marken Works have had a "Secretary of Social Interests," or "Social Engineer," since 1894.

American Instances.

Conspicuous among the American firms employing Social Secretaries may be mentioned the Westinghouse Air Brake Co., among the first to appoint a man to give his whole time to the initiation of social work among the employed; the H. J. Heinz Co. (pickles, etc.), in which the Social Secretary works under the superintendence and with the co-operation of the junior partner; the Ludlow Manufacturing Associates (spinners); the International Harvester Co.; the National Cash Register Co.; Filene's Store (drapery), of Boston; the Shepard Co. ("department store"), of Providence, Rhode Island; the Curtis Publishing Co., of New York; the Colorado Fuel and Iron Co.; the Proximity Cotton Mills, of Greensboro', North Carolina; Hamilton, Carhartt and Co. (clothiers), of Detroit; and the Siegel-Cooper Store, in New York. A kindred appointment without the name is held by a lady at the great Wanamaker Store in New York. It is, indeed, becoming recognized as essential to the smooth working of these huge concerns, and their normal extension.

The Workers' Friend.

The important function of the Lady Social Secretary in engaging girls has already been alluded to; if she is the right woman in the right place she "mothers" those girls right through, and maintains a tone unusual in factories. Of one such it was recorded by a girl under her charge, "She makes us feel that after all there is sunshine to be found in store life, and it gives us confidence, and helps us to feel that there is some one in whom we can confide our troubles." "Often, too," says she of whom these words were spoken, "the Secretary stands between the public and the employees, protecting the girls when unfounded complaints are made against them. She watches, too, the work of the different girls, and sees that promotion is granted where merit is due. Girls who have been discharged are sometimes, through the influence of the Secretary, brought back, and afterwards prove valuable workers." It is the testimony of the heads and buyers of a New York store that by these means "the tone of the store is so vastly improved that they can scarcely recognize it; the efficiency of the employees is very greatly increased, because, in the case of the women and girls, they have felt that 'there is some one to whom we can come and talk, who will encourage, help, and inspire us.'"

It is, therefore, the Secretary's direct personal relation with both employer and employed which tells. With the latter, especially when girls, her influence, if sympathetic, may be very great, in many cases greater even than that of the mother. She will be consulted on matters which are quite unknown in the home-circle, while in the factory or behind the counter other problems and difficulties arise which need but a loving, strong hand to be avoided. Similarly, a man who conforms to the boys' ideal—athletic, good-natured, high-spirited—has an immense influence among the younger male employees, taking the lead in their recreative and educational organizations, while he is as much appreciated and respected by the elder men who are worth retaining.

How to Start.

No doubt some little suspicion will generally be aroused by the introduction of a Social Secretary, but the experience of those who have tried it shows how easily a little tact will disperse any misunderstanding. The new official, with the status of a Head of Department, is best introduced at first without demonstration, merely as some one to look after the material surroundings of the employees. Improvements carried out at his suggestion will soon proclaim him a friend, and he or she may be asked to give health-talks, or something similar, which will make him—to use the inclusive pronoun—personally known to all. Meanwhile he will be interviewing and engaging applicants for work, and receiving requests for increased pay, or investigating complaints. Visiting the sick and procuring special privileges where advisable will soon enable him to show himself a real friend. Others have gained the confidential position desired by organizing sewing and other classes, encouraging gardening, and directing recreation.

In the Filene Store the lady engaged for this purpose, having had no previous experience of her surroundings, was appointed for the first three months "floor manager," to gain an insight into working conditions. No mention was made of other than the ordinary duties attaching to that position, but after this experience she was allotted an office, to which any one was sent who had a grievance, or who demanded a "rise" or a change. Then the new official was entrusted with engagements and dismissals, but subsequently, as she preferred to work without any show of authority, this was abandoned, and the newly-engaged are simply introduced to her. Her access to authority is, however, fully recognized, men, as well as girls, making all applications through her, of their own free will. She makes it her first duty to represent the interests of the employees, at the same time guarding the interests of her employers, pointing out to employees when their demands are unreasonable, and showing them their own interests. She has therefore to assume something of a judicial attitude, basing her action not on sentiment or philanthropy, but on what is reasonable and business-like. The motto of the house, which she exhibits practically to the employees, is, "This firm is fair"; and if every employee feels this, as is evidently the case, it is easy to understand how the feeling can be communicated to the customers, and how favourably it must affect business.

A Personal Experience.

Even from this point of view alone, the Social Secretary becomes a business success. In the words of an American well acquainted with the subject, "Leaving out the humanitarian side of the question entirely, the ultimate

A Business Success.

end of all these efforts for the employee must result in more intelligent and efficient service to the public, bringing to a store known as having adopted these methods the best trade in the community, and also an added respect from both employee and customer.

" Every business firm or manufacturing establishment that has appointed a Social Secretary, either man or woman, declares that it could not now dispense with the service of this appointee. Harmony has come into their business, and friction, discord, and discontent among the employed have ceased; the customers see the change and feel it, and the result of system and method, tinged with kindness, consideration for others, with an atmosphere of good thoughts, has brought not only increased trade, but makes it a real pleasure to 'shop' in these stores. The Social Secretary is needed in business, and has come to stay." The manager of the Stanley Electric Manufacturing Company of Pittsfield, Massachusetts, in recording their failure to successfully establish a club managed by the employees at their own desire, attributed it to the lack of a Social Secretary to keep the parties in touch. "This," he said, "was our mistake I think. I feel we should have had a Social Secretary in the beginning, because managers are busy men, and as a rule they have not the time nor the inclination to do the thing thoroughly."

An "Advance Department."

The National Cash Register Co. has placed its lady Social Secretary—a University graduate—in charge of what is known as the "Settlement House," opposite the factory, where are comfortable sitting-rooms and a small library, intended for the organization of social clubs. Weekly social evenings are arranged, for which cards of invitation are issued to a limited selection of men and women each time, always including a few important officials, to give tone to the gathering. In connection with these, self-supporting dancing classes, with 450 members, half men, half women, are held in the factory, also attended by men and women of position. At the close of a recent season a cotillon was danced in the factory by four sets of fifty couples. To girls the club sitting-rooms are always open for reading, rest, or letter-writing, and the Secretary, who lives there, invites to meals those with whom she desires to get in touch, organizing as desired classes in English, German, French, rhetoric, art, cooking, carving, poker-work, bent iron, sewing and dancing, for which a small membership fee is charged. All this is under the charge of what is called the "Advance Department," and it is an advance of which to be proud. The lady Social Secretary has three assistants, and there is a Welfare Manager in charge of the men's interests.

"N.C.R." SETTLEMENT HOUSE.

The remarkable social work of this pioneer firm in industrial betterment may almost be said to have culminated in the formation among the women of a Century Club, the object of which is not only to further social work in their own factory, but to promote its extension throughout the world. To this end, with the firm's assistance, they issue a magnificently got-up quarterly, *Woman's Welfare* (1s. 8d. a year), many copies of which are circulated gratis among those likely to be stirred by its contents. Urged by this to rivalry, the men employed by the same company have more recently established a like publication, entitled *Men's Welfare*, which takes a somewhat wider outlook, including municipal affairs in its scope. The duties of the lady Social Secretary are here, as at the Cadbury works and elsewhere, supplemented by the efforts of capable forewomen, who, in both instances, seem to hold a position much more important than that of the average foreman. Messrs. Cadbury consult their forewomen as far as possible, with excellent results.

THE WOMEN'S CENTURY CLUB HOUSE, "N.C.R." CO.

Another instance of social work done by one appointed for other duties is that alluded to of the Wanamaker Store in New York. There it is the holder of a post unknown, I believe, in this country, who acts in these great "department stores" as "hostess" or "guide," her duties being to pioneer customers round the establishment, offering advice and assistance in the choice of goods, just as if she were a friend acquainted with the business who had come with them to "shop." By practised questioning she ascertains just what they want, or helps them to make up their mind, and then, instead of their being bewildered by an endless array of goods, she goes to the saleswoman who has what will suit, and obtains it at once. Ladies unable to come themselves will send their orders to her to be executed, instead of to the firm direct, thus availing themselves of her personal taste and her knowledge of their tastes.

A Store "Hostess."

In this particular wilderness of attractions the "Hostess," with five years' experience as superintendent of a Y.W.C.A. home for business girls, devotes all her spare time to those of the establishment, for whom she has organized a "Looking Forward Club"—"of the women, for the women, by the women." This is quite independent of the firm, beyond the provision of accommodation, being self-supporting with the assistance of concerts and entertainments. Of 2,000 women employed in the store, 350 are members, paying 2s. a year, and organized for classes in English, French, German, elocution, singing, dressmaking, millinery, and cooking.

There is a "Comfort Committee" to visit the sick and provide them with delicacies, also to give presents to brides and babies. The ideal of the "hostess," as expressed to the writer, is "to elevate the ideals and thoughts of the girls, to rouse them to new interests, and to awake them to their opportunities, fitting them to be the best of spinsters or mothers, whichever their future lot."

For the Children.

One sad feature of the industrial world to-day is the number of mothers of young children, who are engaged in work away from their homes, leaving the all-important formative years to less capable, often quite incapable, hands. To obviate this evil in some measure, so long as it must exist—a result of misfortune, waste, or neglect—the ideal measure is that adopted by Messrs. Pretty & Son, at their corset factory in Ipswich. The establishment of a nursery where the little ones may be left by their mothers in the best of care. Two meals and all necessary attention from trained nurses, including a walk in the park on a fine afternoon, may be secured by a payment of 2d. a day, but the lady whose work this is must be otherwise richly repaid. Some firms, however, such as Messrs. Cadbury, refuse to employ married women at all.

At the Val-des-Bois Mills, in France, Messrs. Harmel keep the sexes separate as far as possible, allowing the women to leave first, but where both are required in the same department, special efforts are made to employ there all the members of a family at work for them. In order to further promote the solidarity of the family, all wages due to each household are paid from the office each market day morning (Thursday) direct to its head. Married women are employed as little as possible, but when they are, they—and unmarried girls who are housekeepers—may leave half an hour earlier daily, and two hours earlier on Saturdays, to get the meals ready, without any deduction being made from their

BENEFICIARIES OF DAY NURSERY
IN CONNECTION WITH MESSRS. PRETTY AND SON'S WORKS, IPSWICH.

wages. In order to prevent extortion, no foremen are allowed to keep shops. By means, too, of advice and assistance to mothers in the care of their children the infant mortality of the place has been reduced to about half that of the whole country—a magnificent example for those manufacturers who only talk as though they had the interests of the Empire at heart. Messrs. Schneiders' care for the welfare of their 25,000 employees—including but eighteen married women—has reduced the death-rate of their children to 90 per 1,000, the average for ten years being 110, that of the whole of France being 160, and of the northern industrial districts 200 to 250. In Manchester, Liverpool, Preston, etc., even these high figures are reached, but our industrial districts have an average rate of only 175 to 180, and in our rural districts it runs as low as 79 to 100.

Raising the Tone.

From the examples cited it will be readily seen how a general raising of tone results from these wise social measures, and a Social Secretary is in a position to look after this side of the work, just as others keep the products up to standard or over. Where large numbers of girls and men are employed it has been found worth while arranging for them to come and go separately, thus avoiding an unseemly rush for train or tram, or any opportunity for horse-play. At Port Sunlight Messrs. Lever Bros.' girls come ten minutes later than the men, and leave half an hour earlier. Messrs. Colman of Norwich, the Bullock Co. and the American Playing Card Co. of Cincinnati, let their girls come fifteen minutes later and leave fifteen minutes earlier than the men. The National Cash Register Co. thus reduces the hours for women to eight, as against nine and a half for men. Messrs. Burroughs and Wellcome pay their girls on Friday afternoon, their men on Saturday morning; but they leave at the same time, the eight-hour day, in the opinion of the firm, admitting of no reduction. Without having absolutely established a Social Secretary, they have a lady assistant in each department, and a lady engages new girls.

The Playing Card Co. allots separate stairways for its men and women, each with lavatory accommodation opening on to it; and Messrs. Clarke, Nickolls and Coombs, of Hackney, entirely separate the men's and women's departments. So also do Messrs. Henkel. The Parke-Davis Company, of Detroit, goes so far as to require hats off in the departments in which girls are employed, this rule applying to visitors as well as to those at work. Messrs. Cadbury only admit to such departments "red badge men," so distinguished as being trustworthy. At the Ferris Blouse Works at Newark, New Jersey, the girls are treated to the gratifying prefix "Miss" when addressed by name.

Effect on Employees.

All this tends to introduce a feeling of self-respect, and to make the factory or other centre of employment attractive to a higher class of girls. "We find that this service brings to us girls of a very high character," writes a partner in Messrs. Thos. Adams & Co., of Nottingham, who have done much in this way, and their experience is shared by all who have acted likewise.

Messrs. Marshall Field & Co., of Chicago, whose object is not to simply meet the material needs of their employees, but, in their own words, "to surround them with the atmosphere of protection," report that "parents throughout the city seem to appreciate this, and make it possible for us to secure a better class of girl for the store." "Intelligent, loyal, satisfied employees" have been secured by these means, with the result that not only does their immense concern work smoothly within, but the impression of just dealing and reliability created thereby on outsiders does much to increase its enormous trade. The Chicago Telephone Company states that the result of the consideration it shows for the welfare of its young women is that "places are eagerly sought for and long retained, marriage having a much less disturbing effect on the business than is usual where women are employed."

The Acme White Lead Co., in consequence of its social work, has always a long list of applicants of a superior class to those usually available, enabling it to select the very best. The National Cash Register Co., "the only factory in town in which the girls are known to be ladies," reports that this was not originally the case, but that the higher type has been secured by the close sifting rendered possible by the large numbers attracted. This and the Filene Company, for instance, will now only accept graduates of grammar or high schools, while the demand for work under the former company has become so great that a notice has been issued limiting applications after a certain date to those who have been previously trained in its own "continuation" schools. After 1915 none will be engaged who have not as children attended a kindergarten. The Yaroslav Mills in Russia will only employ those who have passed through their schools, presumably the only ones available. No one can doubt the effect of all this on either the quantity or the quality of the output, or on the smooth working of the institution, quite apart from the inestimable benefits conferred on the "hands."

Business Magazines.

Another important duty that often falls to the Social Secretary is the conduct of the firm's magazine, though this may vary in nature between the unaided production of the employees, not seen by the Heads until published, and in no way utilized to push the business,—to an elaborate advertising medium conducted as a business venture, but chronicling the social life of factory and "field force" at the same time, inspiring all with the feeling of a life-mission to provide the world with their particular products. Instances of the first class are the modest *Echo* of the Filene Stores, or the *Cavendish Bulletin* of Messrs. Debenham and Freebody, of London; of the second are Messrs. Lever Bros.' elaborate *Progress*, and the *N.C.R.* of the National Cash Register Co., still more pretentious, with an entirely new picture cover in colours each month. This latter company also issues an almost equally elaborate monthly in London, *The British N.C.R.*

Other magazines deserving mention are the *Schlierbacher Fabrik-Bote* (Factory Messenger) of the

KINDERGARTEN EXERCISE AND

BOYS' DRILL : NATIONAL CASH REGISTER CO.

Schlierbach Earthenware Factory, near Cassel; the *Fabrik Bode* (Factory Messenger) of the Van Marken Yeast Works, near Delft; and the *Kleine Courant* of the Gastel Beet Sugar Works in North Brabant: in our own country the *Bournville Works Magazine* of Messrs. Cadbury; *Quidnunc*, of Messrs. Fry, quarterly; the *C.W.M.* (Cocoa Works Magazine) of Messrs. Rowntree; and *Lloyd's Bank Magazine*, quarterly.

In America: *The 57* (formerly *Pickles*) of the Heinz Co.; *The Chameleon* of the Sherwin-Williams Co., Cleveland; *Spatters*, of the Acme White Lead Co., of Detroit; *Factory News*, of the Laycock Bedstead Co., Indianapolis; *Camp and Plant*, of the Colorado Fuel and Iron Co., Pueblo; the *Plymouth Cordage Chronicle*, of the Plymouth Cordage Co., Mass., monthly in English, German, and Italian; the *Briarcliff Bulletin*, of the farms so named, near New York; *Thought and Work*, of the Siegel-Cooper Store, New York; *The Review*, of the First National Bank, Chicago; *Queen Quality*, of the Thomas E. Plant Co., Boston, U.S.A.; and *Among Ourselves*, of Montgomery, Ward & Co. (dry goods), Chicago.

Of these publications and their ultimate value it is well to have the experience of the firms concerned. Thus Mr. Patterson, of the National Cash Register Co., writes: "We believe it to be one of the most essential publications we get out, and are constantly striving to improve it. It keeps us in close touch with our employees, that is its principal function; it creates a healthy stimulus or competition among them. . . . It is one of our best channels for maintaining enthusiasm and interest among employees, and this can be demonstrated by noting the eagerness among them when it is distributed, and the anxious inquiry if some individual fails to receive a copy. It keeps all branches of our business in close touch with one another." It is interesting to note in this connection that a daily report is issued by this firm to each of the 800 travellers and other members of the "selling force," to give them information, advice, and encouragement.

Messrs. Heinz say, "We originally issued our publication in the interests of our travelling salesmen and representatives, in order to keep them posted on what was going on in the different branches of our business. It keeps us in closer touch with our employees, because all are free to send in contributions, and nearly every one is anxious to receive the publication. We considered discontinuing it at one time, thinking it was not of much value, or rather that it was not appreciated, but we found we were mistaken, and every one began to clamour for it.

"It stimulates our business in many ways, because we give good, wholesome advice, and mention the names of successful salesmen, often showing their photographs. It creates a certain amount of enthusiasm and a friendly rivalry. We do not consider this publication as an advertising medium, although three or four times a year we get out a special edition, in which we dwell a good deal upon the progress of our business."

The Sherwin-Williams Co. state: "The *Chameleon* is published by us for the interest and benefit of our local staff: we find that through its columns we can keep in closer touch with our employees. It stimulates all to exert their best efforts towards the promotion of our business. It disseminates information with regard to our products and the methods of pushing their sale, and last, but not least, it is a constant factor in maintaining the enthusiasm inspired by the annual gathering of our employees."

REESE LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

"GARDEN FRONT" OF MESSRS. BURROUGHS AND WELLCOME'S WORKS (*see* p. 76).

REESE LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

II. BUILDINGS

FOREMOST among ideal conditions of factory labour are the buildings occupied and their surroundings. More, indeed, depends upon the latter circumstance than upon any one factor save the goodwill of the employer. No conditions of labour, however ideal, can attain their highest development in confined quarters hemmed in by buildings, each of which shuts out the light and air of heaven from the others: whatever may be done to mitigate the evils of such a position, and much is possible, nothing can fully compensate the effects of gloom and bad air, whether in factory or home. It is therefore of the utmost importance to the conscientious employer and director about to commence new works, or to extend old ones, to consider this vital point; one might almost say at all costs to secure a site with elbow room and natural advantages.

Removal to Country.

It would be easy to instance numerous works, the transplanting of which from crowded centres to sparsely populated suburbs has proved the starting-point of unprecedented success, while those remaining in unwholesome surroundings have either fallen behind or barely held their ground. The Cadburys, who moved from crowded Birmingham to rural Bournville, five miles out, in 1879, employed then but 300 hands, and never dreamed of the present expansion of their business, which now requires 3,600 hands, including 2,400 girls. Surrounded by a model village, which is national property, here is a factory under truly ideal conditions, from which numerous illustrations of industrial betterment will be drawn, as it represents the high-water mark of this movement in England. The immense success of the Cadburys has led the rival firm of Rowntrees at York to adopt the same course, their factory having been recently removed outside the walls to a site of nearly seventy acres, and rendered ideal in most respects, a model village for the workers being in that case also in process of erection.

Similar experiences have attended the enterprise of the Levers of Port Sunlight, who in 1889 removed their soap works from Warrington to an unpromising site on the Mersey, which they drained, and where they too have not only built up a stupendous business, but another model village on lines to be explained later. The Clarks of Street, near Glastonbury, having to begin with the advantage of a country site for their leather works, have unostentatiously provided houses round them for their growing number of employees, taking that personal interest in their welfare which marks all the firms mentioned. Messrs. Chivers, of Histon, near Cambridge, have set a magnificent example as to the right place for a jam factory, by commencing in the fruit field itself, and finally erecting close by a model factory and houses out of the profits of a business built on right lines. Mr. J. G. Graves, of Sheffield, has wisely erected his new building, for the accommodation of some 3,000 employed in the "mail order" business (including some manufacturing), well outside the centre of the town, where he could afford to surround it with its own grounds, and introduce all modern improvements of lighting and ventilation into its 15-feet high rooms.

MESSRS. CHIVERS' FACTORY.

Quite a number of our great printers have removed their book and art works to the country, while those who work there altogether are pressing them hard in competition. Messrs. Hazell, Watson and Viney have thus moved to Aylesbury, where their works are creeper-clad; Messrs. Unwin Bros. to Woking, and so on. It is over thirty years since Messrs. Brunner, Mond and Co. established their now huge chemical works at Northwich, not, it is probable, for the sake of the workers, though these have unquestionably benefited, as well as their employers, from this far-seeing step.

Congested Factory Districts.

Yet, notwithstanding these conspicuously successful examples of a more enlightened policy, who that knows the worst parts of the East End of London, or other slums of this or any city, cannot point to all these industries; printing, soap-boiling, and—repugnant though the thought is—even sweets, cocoa, and jam, carried out amid the most revolting environment? Some trades are, indeed, of necessity confined to certain districts, but many more would be far better placed elsewhere. And when it is remembered that to this modern concentration of industries the present housing problem is entirely due, with all its attendant horrors and waste of life, the location of the factory becomes a question of more than personal importance.

Importance of Removal.

It cannot, therefore, be too strongly insisted upon that removal at least to the outskirts of our towns is indispensable if the best conditions are to be secured, and those who cannot at first transport a long-established business with its buildings and machinery can at least secure the coveted advantage for branches and extensions. The upheaval of the rest may well follow, especially when these advantages come to be realized and the old machinery needs replacing. Elbow room and breathing space are as essential to a growing business as to a growing boy, and the sooner they are secured the sooner it is likely that success will be achieved. Even from an æsthetic point of view the advantages of removal to the country are manifest, and we have yet to realize as a nation what an influence lovely or unlovely surroundings have on our lives and products.

One of the most beautifully situated examples of modern factories is afforded by the Waltham Watch Works, near Boston, Massachusetts, the handsome buildings of which, surrounded by well-kept lawns, overlook on the one side the river, and on the other a park-like village, inhabited by the employees, one-fourth of the married among whom own their homes. The Treasurer has expressed the opinion "that all the investments of the Company which tend to make the environment of the worker pleasant—the parks, the lawns, and the gardens near the factory—pay in many ways. Their chief value is in their moral influence upon the workpeople." Other instances are the Crane Paper Mills, near Pittsfield, Mass.—where the U.S. notes are made—also overlooking a river and "a rural scene of park-like style, unspoiled by fences," consisting of the cottages and gardens of employees, with the homes of the directors here and there.

Co-operation required.

Undoubtedly it is the original presence of a working population and facilities of transport that induce the establishment of factories in crowded centres, but with rapidly increasing means of transport this excuse grows less and less valid. The presence of suitable labour remains the *sine quâ non*, but ways are being found of surmounting this difficulty also. As has been seen, housing experiments of necessity follow the removal of a large business into the country, but of themselves they do not solve the difficulty unless it is possible to give employment to the normal average of workers in each family, male and female. Some measure of co-operation between factories employing mostly men and boys or mostly girls is therefore essential, such as is being rendered possible on the largest scale yet tried in the establishment at Letchworth, in Hertfordshire, of a "Garden City." This should practically demonstrate the true solution of the factory and housing problems, for at root they are one. There both life and labour will be possible under ideal conditions, which it is devoutly to be hoped will ere long be repeated in many other parts of the country.[1]

Those who are unable to take so great a step as this may still be able to move a few miles out, and follow the example of those who bring their workers in and out by special trains running over their sidings right into the yard. Railway companies would gladly facilitate such an arrangement, in view of extra carriage secured. This will at all events enable business to be carried on while homes are springing up around the factory. Messrs. Lever Bros. thus supplement their housing scheme by trains from Birkenhead, and the Bullock Manufacturing Company, of Cincinnati, thus transports its workers seven miles into the country.

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[1] This and kindred experiments receive full treatment in Part II.

Factory Surroundings.

The ideal factory has some pretensions to taste in design, if not in extravagant ornament; it is to a great extent creeper-clad, and is surrounded by lawns and shrubs. Its windows are adorned with carefully tended pot flowers, the pride of the "hands," and the whole place bears a home-like and "cared-for" look, indicative of the conditions of labour inside. Many people seem to think that it does not matter what a factory or the yard round it looks like, and gardeners are seldom found on the pay list, but it pays in the long run to have beds dug at least round the walls, and to lay out all the space possible in grass, if not in flower beds. It is some-

COAL SHEDS "NATURALLY TREATED"
BY THE CLEMENTS MFG. CO., NORTHAMPTON, MASS.

ENTRANCE TO NATIONAL CASH REGISTER FACTORY.

thing even to make a beginning of industrial betterment work, as the Cleveland Hardware Company did, by placing "garbage cans around the factory," and by keeping "the entire plant in order and as clean as possible."

The Acme White Lead Works, at Detroit, Michigan, are painted white, and are surrounded by shrubs, producing a most pleasant effect, while ivy and other creepers are grown inside on trellis from pots on brackets, and pot flowers make the windows gay. The courtyards surrounded by the U.S. Playing Card Co.'s factory at Cincinnati are bright with flower-beds, and the buildings also command fine views of the country. The Cleveland Varnish Company has also beautified the grounds around its factory. The National Cash Register Works, at Dayton, Ohio, are surrounded by grass and shrubs, and the largest possible window openings are provided, so that the workers may raise their eyes from their work to find relief in the beauties of nature, as well as breathing pure air. After a strike—resulting from the employment of non-union hands in one department—the directors gave a practical lesson by simply neglecting the factory gardens, till things grew so bad that a petition was signed by every employee, asking that they might be tended as before. This being acceded to, the attractive surroundings have been restored.

Messrs. Rowntree have a beautiful rose-garden covering four acres outside their factory, allotted to the girls; and Messrs. Cadburys' works enjoy the well-deserved title of a "Factory in a Garden," beautified by Nature as it is in every possible way. The entrance itself is worthy of some botanical gardens. Along the roads between the low blocks of buildings small gardens have been planted, and creepers are trained up the walls wherever possible. In summer the creeper-clad works of Messrs. Burroughs and Wellcome, surrounded by gardens with seats on the lawns, are the one redeeming feature of Dartford, as viewed from the railway station.

ROSE-GARDEN ADJOINING THE ROWNTREE WORKS.

At Messrs. Boden's net factory in Derby, though in the heart of the town, the windows look out on courtyards containing well-kept gardens and a gymnasium, the former of which, writes Lord Meath, "would have done credit to a nobleman's château, so neat and well kept were their flower-borders around the carefully rolled and gravelled space, in the centre of which was a raised bed of shrubs and flowers." A specially noteworthy feature of one of these gardens is the use formerly made of the refuse water from the boilers. This rises as a fountain amid boulders in a pond which it keeps warm enough to grow tropical water-lilies. Here is a practical suggestion which might be adopted with advantage in thousands of desolate factory yards. In America it is adopted in the public parks.

NATURAL FOOD CO.'S "CONSERVATORY," NIAGARA.

In the midst of a ten-acre "lot," overlooking the Falls of Niagara, the Natural Food Co. has erected a pile aptly described as "more a palace than a factory," surrounded by park and gardens, including a playground for children open to all; while at Ishpeming and elsewhere in Michigan, the Cleveland Cliffs Iron Co. makes a point of beautifying what would otherwise be its dreary yards by the free planting of creepers, with magnificent results. It also offers prizes to the employees for the best-kept premises, for creeper planting, and for window boxes, supplying the competitors with plants at reduced prices.

CLEVELAND CLIFFS MINING YARD BEAUTIFIED BY NATURE.

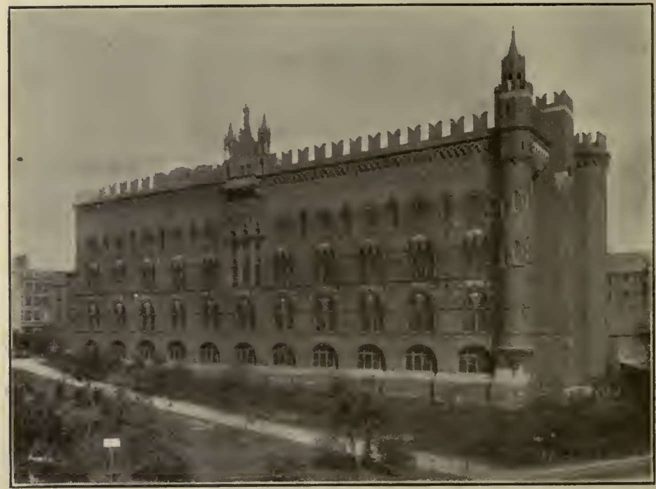
The Plymouth Cordage Company, of Massachusetts, found that in consequence of surrounding their factory with lawns and shrubberies, and cover-

HOUSES OPPOSITE THE NATIONAL CASH REGISTER WORKS.

WELL-KEPT LAWNS AND GARDENS OF EMPLOYEES OF PLYMOUTH CORDAGE COMPANY.

B

ing its walls with creepers, "the employees took home with them the lessons we were endeavouring to teach. They started to fix up their own grounds; walks that had never seen the edging knife were edged, and lawns were carefully cut, which at once began to lend an entirely different character to the homes of the employees."



FAÇADE OF MESSRS. TEMPLETON'S FACTORY.

Factory Exterior.

An admirable instance of public-spirited action on the part of manufacturers on the borders, as it were, of town and country, is afforded by Messrs. James Templeton and Co., whose huge carpet factory overlooks Glasgow Green. This they have rendered a thing of beauty and an added attraction to the neighbourhood, by facing it with coloured brick-work after the design of the Doge's Palace at Venice. There is no need to label such a building with the name of its owners; few of those who admire it will fail to ascertain that for themselves, and be grateful. Other examples of architecturally attractive factory exteriors are those of Messrs. Cadbury and Chivers, and, to some extent, that of Mr. Hartley.

Smoke Abatement.

One objection brought naturally enough against the removal of factories to rural districts is the unsightly and blighting effect of the smoke which their chimneys emit. This, however, fortunately, is no longer a valid objection, as methods have been discovered of not only preventing the emission of smoke, but at the same time of reducing the cost and consumption of coal. Messrs. Joseph Crosfield and Sons, alkali makers, of Warrington, report that they "have solved the problem of burning large quantities of low-priced, common, bituminous coal without smoke, and with great economy. Before attacking the question a few years ago, the firm was frequently fined for emission of smoke, and if the methods then in vogue still obtained, the weekly consumption of coal would be more than 1,000 tons over and above what it actually is."[1] In fact, so successfully has the problem of smoke prevention with economy been solved, that their works are known in the neighbourhood as "the works with smokeless chimneys." Here, as at Bournville, the smoke nuisance has in some cases been abated by the use of Vicars' mechanical stokers, which also double the duty of the boilers; and in others avoided altogether by the substitution of a Monds' gas-plant, which produces the power at a cheaper rate.[1] Messrs. Brunner, Mond & Co.—of course—Messrs. Tate,[2] and Messrs. Lever, too, and many others who might be mentioned, have successfully adopted efficient and up-to-date arrangements to reduce the amount of smoke from their chimneys.

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[1] In a more recent communication Messrs. Crosfield say that the weekly saving now amounts to from 1,000 to 1,200 tons.

"THE WORKS WITH SMOKELESS CHIMNEYS."

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[1] By this system the cheapest slack coal only is employed, and instead of being used for producing heat direct, it is first transformed into power-gas (which can be produced in bulk at ½d. per thousand cubic feet) for the purpose of driving gas-engines. The fuel expense of producing 500 horse-power for a year of 50 weeks of 53 hours is thus reduced to 8s. or 10s. per horse-power per annum, with a total absence of smoke, and with an additional asset of sulphate of ammonia, the most valuable fertilizer known. As this gas can be conveyed any distance in pipes, it is therefore eminently adapted for the requirements of industrial garden suburbs.

[2] See account of their stokers' bonus scheme, p. 320.

The National Cash Register Company manages to dispose of even the smoke of its foundry.

No need for Smoke.

The whole trouble of smoke emission from factories arises from ignorance of most important economic facts. These are (*a*) that all solid matter in smoke, and a large proportion of the gases so obnoxious when set free in the air, are absolute waste, being unconsumed fuel; and (*b*) that the process of combustion being a chemical one, it is the chemist, not the engineer, who should be entrusted with its control. The desideratum to be secured is the precise temperature at the point of contact between fuel and air which will secure complete combustion at once, and so produce the maximum amount of heat by precluding the possibility of waste in smoke. To this end it is necessary for the chemist to daily sample the gases which pass

CADBURY
BOURNVILLE

POWER-GAS PLANT AT BOURNVILLE, 500 H.P.

up the chimney—which can be done automatically—so as to be able to regulate exactly the supply of fuel and air; or if need be to have the construction of the furnace altered. The so-called skilled fireman is no longer required, and one ordinary labourer can attend to a long row of furnaces. The offensive matter present in London and other like fogs is to a great extent due to the mistaken introduction of multi-tubular boilers, suitable only for anthracite or other coal without volatile constituents. The volume of fuel so wasted, to say nothing of its injurious nature, may be judged from the fact that during ten hours in November, 1904, at the Manchester Technical School, a Sturtevant fan collected from the atmosphere on a surface 6 feet square no less than 78 lbs. of solid matter.[1]

Factory Designing.

The designing of model factories calls for a special class of architects, making it their business to become acquainted with the whole of the processes of manufacture in order to secure the most economical handling or haulage of material, from its entrance in the raw state to its delivery in the finished. This is seldom possible in crowded districts, where every foot of space is of value, and all operations are more or less hampered. How much less likely are the requirements of the work people to receive adequate consideration! Sometimes it is a fire which enables reconstruction on better lines to be effected, as when in 1874

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[1] For further information on this important subject those interested are referred to Messrs. Booth and Kershaw's "Smoke Prevention and Fuel Economy," Constable, 6s.

Messrs. Harmel, of Warmériville, near Rheims, rebuilt amid gardens and shrubs their woollen mill for nearly a thousand hands, all lighted from above, with 261 to ·349 cubic metres of air space to each worker.

The proper way of setting to work is that followed by the Weston Electrical Instrument Company, of Newark, New Jersey, which, "before planning its new works, employed two mechanical and engineering experts to visit the most notable manufacturing establishments of the United States, studying problems of construction, machinery, and other physical conditions. Another expert travelled through the country for a year to learn what American employers were doing for their employees outside the mere question of wages, and when the present plant was erected the Company reserved the most desirable portions of the premises, several commodious halls, and furnished them as recreation-room, library, kitchen, dining-room, gymnasium, natatorium, bicycle depôt, hospital," etc. This model factory covers seven acres out of an estate of twenty-seven, and is surrounded by woods and lawns. Details of some of its features will be described in their place, but Mr. Weston declares, "We have done nothing, as yet, save to make a few rough beginnings." Another wise firm is the Bremen Wollkämmerei (wool-combing works), which has commissioned a representative to visit the most progressive establishments of Europe and America, without limit as to time or expense, and to report on the conditions of labour therein, and generally to glean new ideas.

The factory architect needs to understand and enter into the spirit of industrial betterment. The McCormick Harvester Co., having, like so many others, permitted its works to grow haphazard hitherto, has recently engaged the services of special sanitary and ventilation experts to re-model the systems employed, so as to secure the most healthy conditions of labour for its 8,000 employees. In the Yaroslav Cotton Mills in Russia there is a special Sanitary Council, consisting of two doctors and the technical experts, who have charge of everything concerning the health and safety of the people. Throughout the factory are evidences of their care, notably the ample passageways between the machines, and the careful shielding of dangerous parts.

Need of Experts.

This matter of safety appliances is one requiring close attention in the model factory, from the simple warning given by painting dangerous parts vermilion, to elaborate automatic devices for protecting the most rash and foolish. There is hardly a factory in which some of these could not be introduced to advantage, even to the employer's pocket, which they save from claims, but circumstances vary so greatly that detailed description would here be impossible. Those interested, however, might with profit visit the museums of safety appliances at Antwerp, Charlottenburg, and Munich, where specimens of all sorts of devices are exhibited at work. Unfortunately every factory inspector can tell of numerous deaths and countless mutilations resulting from carelessness in

Safety Appliances.

this respect, especially where young people are employed.

Precautions Against Fire.

Here also arises the question of precautions against fire, which are seldom what they should be, little being done beyond the requirements of the insurance companies, who do not consider loss of life. The U.S. Playing Card Co., of Cincinnati, realizing this, have had all their lifts and stairways placed in wings built out from the main building, instead of being, as is too often the case, in the centre. Another provision which they have adopted is the system of automatic fire-doors, running on inclined rails at the top, which shut directly the composition holding them back is released by heat, while all wooden surfaces are

MUSEUM OF SAFETY APPLIANCES, ANTWERP.

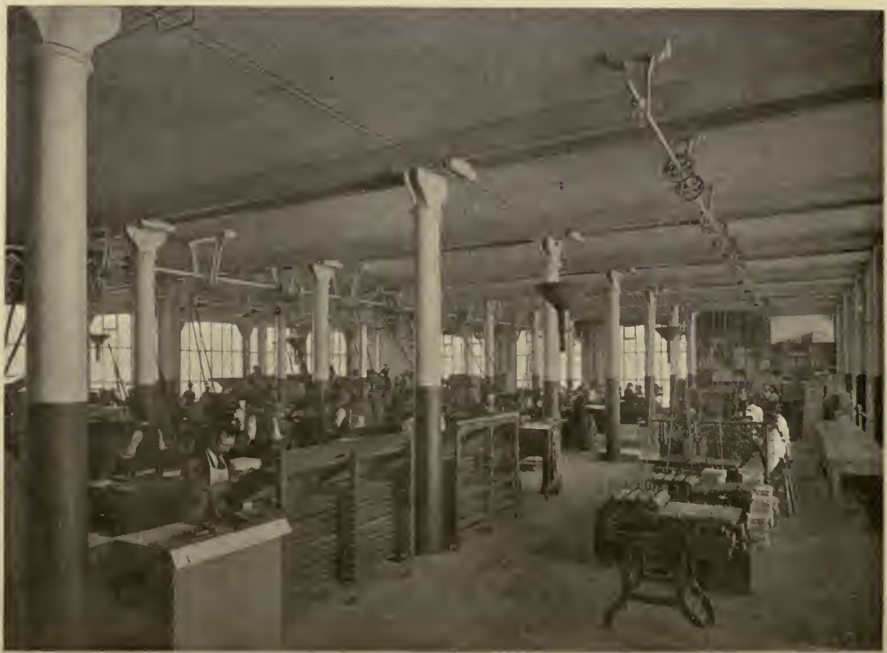
protected by clinched tinned sheets. This appliance is to be seen, among others, in the electric-light fitting works of Messrs. J. H. Holmes & Co., at Newcastle, and those of Messrs. Joseph Crosfield & Sons, of Warrington. This last-named firm employs concrete two inches thick, stiffened by iron rods, to secure interior fire-proof partitions, and similarly utilizes its old scrap-iron for the floors of corridors and steps, on each of which latter coir mats are strapped. The Brown Hoisting Machinery Co., of Cleveland, employs corrugated iron in thin concrete for both walls and floors, with excellent results. In Messrs. Ludwig Loewe's engineering works in Berlin there are very complete arrangements for fire extinguishing, which include a special service of pipes for filling all the buildings with steam.

Fire Brigades.

More or less efficient fire brigades are organized in most large factories, and some, such as the shield-holders of the "Clarnico" works, have achieved professional skill. On an unexpected fire alarm which the writer witnessed at Messrs. Crosfield's works, their brigade, which ranks second in their county, had their hand engine delivering in two minutes, a hose at work on the roof in three, and the oil-fuel horse-engine leaving the yard in four, all fully equipped in uniform, and delivering 750 gallons a minute. A similar alarm when he was present at the Acme White Lead Works secured the delivery of water by one hose in the yard in 28 seconds, and that of another on the roof, reached by ladders, in 58 seconds. Directly the warning is heard, every worker at Messrs. Crosfield's stands to attention, makes a half turn, and follows the leader by a prescribed route to the door, so that in a few seconds the whole place is empty but for the returning bucket- and hose-carriers, thoroughly drilled whether men or girls, to their appointed stations. During the whole performance no two are allowed near enough to touch, so that all risk of scrambling is avoided. Messrs. Burroughs and Wellcome, of Dartford, get a hydrant up in 40 seconds, and twelve in two minutes. At the works of Messrs. Colman, fronting the river, they maintain a floating fire engine.

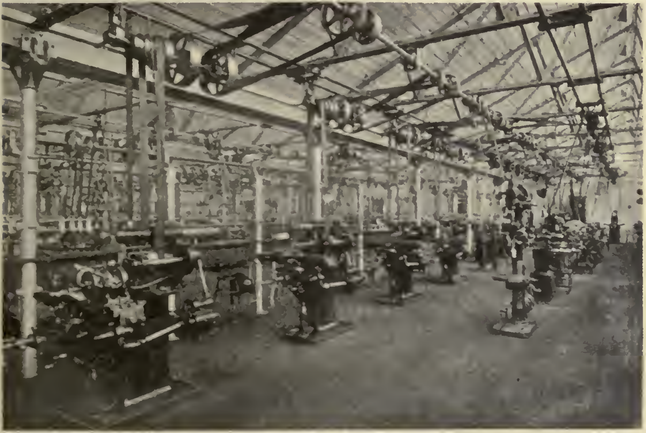
Light in Workshops.

The manifest advantages of increased light in factories leads to much more extensive use of glass in the walls, especially where, as so commonly in America, the frame-work being steel, there is no need for much solid brick-work. This system is worth adopting for that reason alone, as it enables the major part of a building to be transparent, whether a factory of many floors, as in the case of the National Cash Register Co., the walls being almost entirely glazed ; or a vast glass machine shop like that of the Brown Hoist Co., 500 ft. by 312 ft. and 70 ft. high, of four large aisles. A third of the wall-space of the Bullock Manufacturing Co. shops is glass. The Natural Food Co.'s factory, well named a "conservatory," covering three acres of ground, has no less than 30,000 panes of glass in its construction. Even where from the nature or position of existing buildings sufficient transparent surface cannot be secured, a great deal may be effected



DISTRIBUTION OF LIGHT BY PRISMATIC GLASS AT MESSRS. CROSFIELD'S WORKS.

by the use of prismatic glass,[1] which throws the light direct into the centre of the rooms, so evenly distributed as not to cause glare or shadows. The accompanying illustration shows the effect of this in the printing department at Messrs. Crosfield's, 80 ft. by 103 ft., 15 ft. high, yet equally lighted all over, a most important consideration where good work or quick-running machinery is in question.



BRILLIANT LIGHT SECURED AT THE WESTON ELECTRICAL WORKS.

"A flood of perfect North light illuminates every part of the great room" of the Weston Company, 250 ft. by 200, and 18 ft. high, "not a shadow or a dark corner to be found." This is secured by the adoption of a "saw-tooth" roof, already common in some classes of works, with the glass face to the

[1] Made in England by Messrs. Pilkington, of St. Helens.

North set at the maximum angle of the sun's elevation, so that its rays cannot enter till the late afternoon, when most of their power is lost. This arrangement, the Company reports, "never clouded by snow or frost, affords the wonderful light, and permits double work-benches with the operatives facing each other; and which, combined with an ingenious method of shafting and machinery, it is estimated, effects such economy of space that one square foot of the Weston floor is equal to two and one-half-feet in the ordinary scheme of factory building." To obviate the difficulty usually experienced with this class of roof from leakage and condensation, producing drops and moisture in the atmosphere, which would be fatal in an instrument workshop, Mr. Weston devised a double-gutter system, draining through the supporting columns, 16 feet apart.

Factory Walls.

The walls of factories, where they must be walls, are best faced with glazed bricks, as in the case of the Plymouth Cordage Co., of Messrs. Holmes, of Newcastle, or of the Co-operative Bakery at Glasgow, where they are kept constantly clean, as well as the floors of the kneading and other departments, by a gang of women so employed incessantly. Fitting the hollow angles with correspondingly rounded bricks will prevent accumulation of dust, and they are by no means expensive. These are found in Messrs. Ludwig Loewe's engineering works, where sluicing with a hose cleanses thoroughly, the tops of all cupboards and lockers being also sloped to prevent the harbouring of dust and rubbish.

Floors.

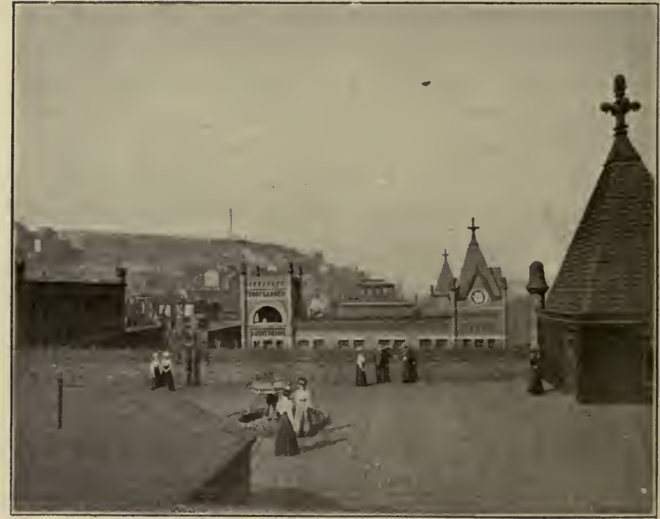
Another item in construction making for the comfort of the employees is the floor. When this is of stone or brick, it is terribly cold to stand upon in winter, and when of boards it soon wears into valleys separated by painful hillocks of knot or nail. The floors of Messrs. Lever Bros.' workrooms are, as they should be, hard wood blocks laid on concrete, with the surface well drained, often a most important matter. The experiment of such floors made by Messrs. J. H. Holmes did not prove satisfactory, with the great wear and tear involved, and accordingly they have now laid them in concrete, providing boards for all the men's use in winter, to avoid rheumatism and kindred ills. The floors of Messrs. Loewe's works, covering six acres, are entirely laid with maple brought for the purpose from America, laid on thicker pine affixed to sleepers in concrete. The floor of the Natural Food "conservatory" consists of 4 in. Georgia pine covered with ¼ in. Salamander fire-proofing, on which is laid ¾ in. of hard maple.

Height of Workrooms.

The loftiness of workrooms is of course a desideratum, but one often difficult to secure, except when building on one or two floors only, in the country. Or rather, the possibility of securing this loftiness, and at the same time avoiding expensive lifts, using trolleys on rails instead, is one of the advantages of moving out from town. The freedom of workshops from pipes and wires not essential to them is achieved in the "N.C.R." and Weston works, by placing them in a system of tunnels beneath the floors, where they are at all times readily accessible.

Factory Roofs.

A point of great importance in factory design, in town even more than in country, is the use or waste of the roof. Modern factories, it is true, have generally a sky-lit top floor, especially useful for fine work, but apt to be either unbearably cold in winter or hot in summer.



PART OF ROOF GARDEN ON MESSRS. HEINZ' FACTORY.

A much better plan is to have the roof space flat, with glass paving where desirable, so that it may be utilized for recreation ; an awning above may protect the floor-glass from direct sun when too strong. Roof-gardens, on which the dining-rooms may well open, are of infinite value in towns, especially when their maintenance is the duty of a workpeople's

ROOF PROMENADE ON MESSRS. JACOBS' FACTORY.

committee. Messrs. Heinz, of Pittsburg, have not only excellent promenades and gardens for men and women on the roof of their factory, 170 feet by 100 feet each, with plants in pots and creepers up the walls, but they have built in a tower a music room supplied with an organ which is played after lunch or for dances. Their example has been followed by Messrs. Jacob and Sons, in their biscuit factory in Dublin, which possesses a roof garden on top of the new portion of the buildings. So does Mr. J. G. Graves' new building in Sheffield, notwithstanding its open situation in one of the best parts of the town. The Natural Food "conservatory" has a beautifully appointed roof-garden, "one of the picture-spots of Niagara."

Given such factories as one would wish to see dotted throughout garden suburbs, surrounded by the peaceful cottage homes of the workers, each with its plot of cultivated ground, let us in fancy apply for work.

III. WORKROOMS

Factory Mottoes.

ON entering a factory or other centre of employment, it soon becomes apparent if special steps are taken to promote the welfare and contentment of the workers. Some American factories indulge in mottoes which confront one everywhere, such as "It's Right!" the watchword of the Laycock Company; "Do it now!" which, hanging under every clock in the establishment, stimulates the Sherwin-Williams employees; or "Take hold and lift!" which almost presses into service the visitor at the Acme White Lead Works. The various Van Marken factories have each a distinctive motto: thus that of the Yeast and Spirit Works is "The Factory for All: All for the Factory"; that of the Oil Works, "One with Another for One Another"; that of the Glue Factory, "Persevere wisely: Success comes at last"; and that of the Co-operative Press, "Through Labour to Labour." The Carl Zeiss Works at Jena are animated by the declaration "I rust if I rest." It would be difficult to say what is the motto of the National Cash Register Works, the walls of which are blazoned with such practical quotations as "He that can work is born king of something," "Labour is a girdle of manliness"—among a selection of forty.

At the Acme Sucker Rod Works in Toledo, Ohio, it is the "golden rule," "Do unto others as you would that others should do unto you," which is framed on the walls as the factory motto, and the management sets an excellent example of its practice. None of these are idle catchwords, but expressions of the spirit in which those successful businesses are run. Turn where you will, they appear on beams and stairways, literature and packing-cases, as inspiring as some old family motto up to which successive generations have tried to live. If they are the outcome of a real wish to practise them, they can be strongly recommended, but they need living up to, especially when implying the admirable principle, "This Firm is Fair."

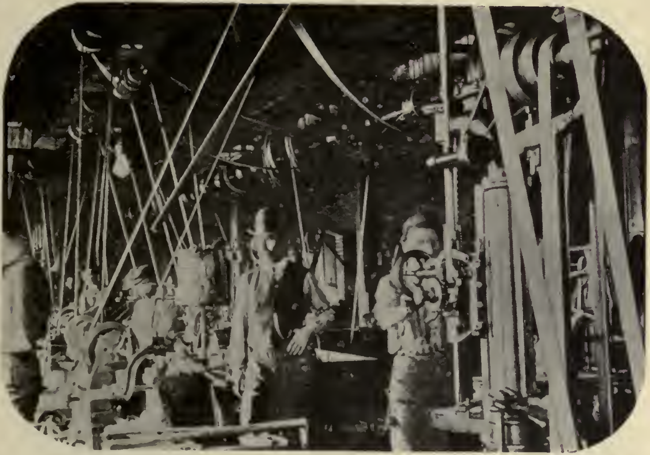
PART OF THE NATIONAL CASH REGISTER FACTORY.

Colour in Factories.

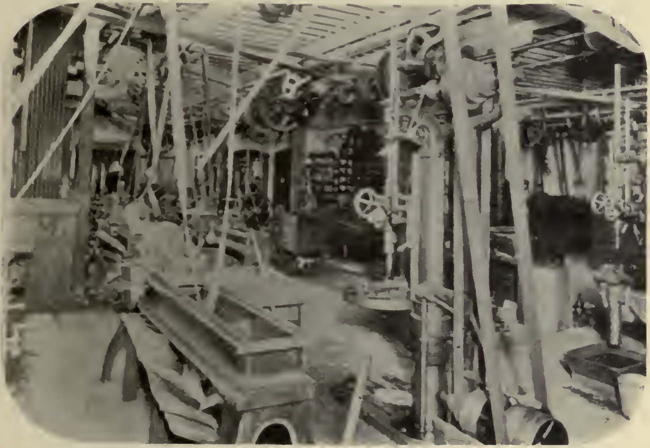
But quite apart from indications only to be observed in communicating with the employees, the ideal factory should prove itself such by the care and taste exhibited in its interior, and by its spotless condition. There is no workshop in which this cannot be made apparent to some degree, and there are very many which, instead of being gloomy, depressing, half-cleaned barns, may be made places of light and beauty. As an instance of the magical effect of keeping the walls and ceilings of machine shops quite clean may be mentioned the McCormick Harvester Works at Chicago, where the iron-work is painted in colours differing from room to room, but all bright—red, blue, yellow, and green. Who will question the certainty not only of greater accuracy, but also of better work all round under such improved conditions? Other American manufacturers have adopted the plan of painting their machinery "nickel colour," as in the immense machine shops of the Weston and Bullock Companies; the latter, where the wood-work is painted white, being run by electricity. As in this instance, owing to the use of an individual motor for each machine, there is an entire absence of obstructive belting and pulleys, the unusually bright and pleasant appearance which replaces the usual gloom may be imagined. Such portions of the Natural Food "conservatory" as are not window are white, the woodwork being enamelled, presenting a most attractive appearance in its spotlessness. The Parke-Davis Drug Co., of Detroit, keeps the whole of its huge factory painted white inside, even the barrels, while glazed partitions replace wooden ones wherever possible. This latter plan is also widely adopted now to divide factory floors and suites of offices, as in the National Cash Register factory at Dayton, in which the managers boast that even the foundry has been made attractive. An excellent example in our own country is afforded by the "tabloid" works at Dartford.

Flowers in Factories.

One does not usually associate the dust and din of a cotton mill with ideas of beauty, yet the two have been combined in former years by the Willimantic Thread Co. of Connecticut. There the "pockets" between the piers of the great spinning room (nearly 1000 ft. by 200 ft.) were "filled with climbers, together with geraniums, petunias, and flowering shrubs." Such a scene must have daily gladdened hundreds of eyes, and though owing to a difference of opinion among the directors this and other social features of the factory were ultimately abandoned, some have been retained, and still make the lot of the employees enviable. In the case of the Ludlow Spinning Co., it was among the shareholders that objections to expenditure on social work were raised, with the result that the better-advised directors bought out the objectors and remodelled the concern as the Ludlow Manufacturing Associates, under articles permitting of what they knew to be a wise investment, judicious expenditure in improving the conditions of the workers as well as those of the machines, a policy which has been eminently justified by the results.



MACHINE-SHOP IN McCORMICK WORKS, AS IT USED TO BE.



THE SAME SHOP AFTER PAINTING AS DESCRIBED.

Messrs. Rowntree employ a factory gardener, one of whose duties is to keep the works supplied with plants and flowers fresh each Monday morning, to water them and to replace them as required from the greenhouse. The flowers are in charge of one of the social workers. Hanging baskets of plants in corridors and work-rooms are a pleasant feature here.

DECORATION OF CORRIDORS BY MESSRS. ROWNTREE.

At Messrs. Clark's works at Street flowers may also be found on the benches.

Decoration of Walls.

The Ferris corset factory at Newark, New Jersey, has not only creepers outside its walls, but curtains inside its windows, a thoughtful provision which must bring an ample reward when fine work is required. The usually bare factory wall may be inexpensively decorated in many ways which will make the place more home-like, foremost among them being the free use of pictures, not merely pasted on, but framed and hung with taste. The climax in this respect is reached by the Heinz pickle factory at Pittsburg, the walls of which are covered with pictures, all of them changed once a month, a most important feature. In this case, too, the beautiful collections of curios made by the principals throughout the Orient are placed in each workroom in turn. Thus educational advantages are added to æsthetical, and the constant freshness produced by changing positions prevents neglect resulting from familiarity, while it stimulates observation. The U.S. Playing Card Company thus utilizes the original designs which it reproduces in large numbers, forming quite a picture gallery. When it is remembered that most of the waking hours of the employees are spent in the workshops; the importance of beautifying them needs no emphasis.

Model Fittings.

The company last mentioned shows its practical turn of mind by among many other points not permitting a screw or a nail to be used in the office fittings, even to hang the pictures, all being independent and ready

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for removal if the space is required for other purposes, a precaution which also permits of efficient cleaning—rare enough in offices and workshops. Modern discoveries as to the habits and accomplishments of microbes render such provision advisable everywhere, but indispensable in factories producing food.

PICTURES ON WALLS OF THE HEINZ FACTORY.
(Cosy Corner in Girls' Dining Room.)

Yet how commonly these are as bad as any in reality, if not in superficial appearances.

Constant Cleanliness.

The ideal condition in such cases is that of the Heinz factory, the floors of which are not only cleared and cleaned every night, as satisfies most, but are *kept clean all day long*—no spot or scrap being allowed to remain where it falls. The advantages of this plan need to be brought home to many. "Immaculate cleanliness," and an entire absence of dirt and grit are maintained by the Weston Company; and Messrs. L. O. Konen and Brothers, of Jersey City, boiler makers, state that "every part of the factory, as well as the machinery, shelving, closets, and floor space, is kept free from dust and dirt of all kinds." The Roessler and Haaslacher Chemical Works are "kept in a condition of absolute cleanliness"; so are the Sherwin-Williams factories, and the machine shops of Messrs. Loewe, of Berlin.

This principle is also adopted by the Glasgow Co-operative Bakery, by Messrs. Burroughs and Wellcome, and by Messrs. Joseph Crosfield and Sons, among many who might be mentioned who employ special men or women the whole of their time cleaning up, English laws requiring this to be done in work hours.

Printed rules are posted in Messrs. Crosfield's works—spitting, for instance, being prohibited on pain of instant dismissal. All dust, smoke, fumes and soot are avoided as far as possible, and the principal departments are lighted by electricity. At these works may also be seen in operation the model system of excluding dust where fine machinery is at work. This is accomplished by what is styled an overplus pressure of filtered air *within* the building, which, by its force, keeps all doors shut, and escapes only from a valve at the top. The windows of the Natural Food "conservatories" are double, to exclude dust and smoke.

But, for the well-being of the workers as well as of the machines, in the factory as in the home, the condition of the atmosphere is a matter of supreme importance. A realization of the effects of neglecting this makes apparent at once the deteriorating results to the human machine and its output. As well expect a motor to run smoothly without oil, or to manipulate material successfully at an excessively high or low temperature. The progressive employer, realizing this, counts the expenses of adequate ventilation and heating or cooling well spent. Nearly half a century ago the advantages of both these operations were demonstrated by Sir Titus Salt in his famous woollen mills near Bradford.

Ventilation and Heating.

In the great Yaroslav cotton mills in Russia, with 370,000 spindles, 3,000 looms, and 14,000 employees, the atmosphere is maintained at a constant temperature of 77° F., and with 50 per cent. of moisture, increasing to 60 per cent. in winter. Every hour the whole volume of air is changed by machinery forcing moistened and tempered air from the outside through galvanized pipes with valves at intervals for distribution. The cooling in summer is effected by means of Körting's atomisers, the air from the ventilators passing through water forced into a fine spray under a pressure of three atmospheres. Messrs. Rowntree have adopted a similar system in some departments, in which the whole of the air is changed several times each hour, the fresh air being filtered through a water screen, and in winter heated by steam. "There is no doubt," they say, "that from the points of view both of the employer and the employed it is amply worth while to give careful attention to this matter."

The Brownell photographic factory of Rochester, N.Y., is furnished with apparatus entirely changing the air throughout every ten or twenty minutes, a hot blast bringing the temperature to the level required in winter, and an iced blast in summer. A like method is employed by the Bullock Co., of Cincinnati, which utilises the exhaust steam for heating purposes; by the Natural Food Co., sucking in a complete supply of fresh air from over the Niagara river every five to fifteen minutes; by the National Cash Register Co., which in summer draws its supplies from the roof; by the U.S. Playing Card Co.; by the Brown Hoisting Machinery Co., of Cleveland, which also employs exhaust steam for the purpose, the temperature being automatically regulated by pneumatic thermostats; and by other firms too numerous to mention. The Cleveland Hardware Co. supplies cooled air to the forge and rolling mills; and the J. H. Williams Co., of Brooklyn, does so to its forges, thus rendering possible constant instead of intermittent work. The first-named firm was thereby enabled to introduce an eight-hour day, during which the piece-worker turns out practically the same amount as formerly in ten or twelve hours. Fresh air is delivered as close as possible to each man at work in the mills, the supply being under his own control, and in the roof of the forge a large unglazed opening with sliding doors admits light and air at once. The Chicago Telephone Co. "meets the needs of its machinery and equipment at the same time" by supplying pure air to its exchanges, and maintaining it at an even temperature all the year round. "Perfect systems of sanitation and ventilation" have been adopted by the Arlington Company of New Jersey (toilet articles), and by the Weston Company. The Westinghouse Company maintains the temperature throughout the works at 70° F., drawing the air from the roofs through coils of steam piping in winter, and opening all windows as well in summer.

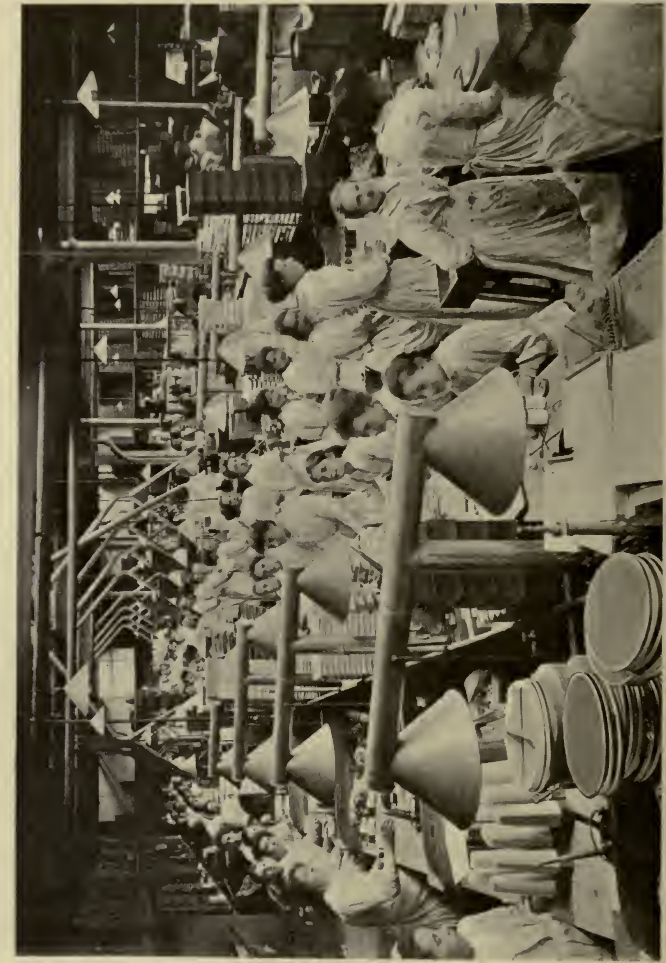
Air Filtration.

The Co-operative Baking Society of Glasgow artificially cools its work-rooms with the best results for products and producers, while Messrs. W. H. Holmes and Sons, paint makers, Messrs. J. H. Holmes and Co., electricians, of Newcastle, and many others, use the Sturtevant system, whereby the air is cooled and washed by passing between sheets of corrugated iron, over which water flows, and then over steam pipes, which will raise the whole atmosphere of the works from 32° to 60° in ten minutes. A Sheffield firm, Messrs. Ibbetson Brothers, introduce "moorland breezes" into their offices by the use of a churn purifier in which air and water are so thoroughly mixed that every solid particle contained in the former is washed out and got rid of, steam being then used to warm the cleansed air. Factories situated in towns might well adopt such an example, or at least that of the Brown Hoisting Machinery Co., which before tempering the air brought in from outside, filters it through large surfaces of cheese-cloth—at least two—a foot apart. In a brief space the outer surface becomes absolutely black and clogged, but it is incredible without examination how much more is removed by the second filtration.

Situated in the country, Messrs. Cadbury have been able to adopt a system of ventilation which their experience leads them to describe as "the simplest, yet the most effective, that can be used." Hot-water pipes run round the outside walls, with a series of openings on the same level, which can be regulated according to the condition of the weather or time of day by a man told off for this special duty. Cold air coming in is warmed by contact with the pipes over which it passes, and is deflected by guards, so as not to blow directly on to the feet of the workers. Hot-water pipes run beneath the tables used by seated girls at Messrs. Crosfield's works, with footboards over them.

Noxious Products.

Meanwhile the air within the factory is being loaded with dust; odours and steam from the various processes, all of which are too often allowed to remain along with the exhaled carbonic acid gas. A pleasant contrast is afforded on entering such a work-room as that at Bournville in which the bon-bon boxes are made. Here, in a perfectly adjusted atmosphere, sit long rows of girls, each with a gas-jet and glue-pot before her, both emitting injurious and unpleasant effluvia. All this is sucked at once by exhaust fans into the funnels hanging over each, so that nothing escapes to pollute the air. Similar precautions are taken in many other model factories—as, for instance, the Badische Anilin-Soda-Fabrik, the J. H. Williams Co., the Plymouth Cordage Co., and many others—to



VENTILATION OF MESSRS. CADBURYS' CHOCOLATE BOX DEPARTMENT.

abstract the vapours, sawdust, emery powder, filings, paint dust, and whatever might be injurious to health. The American Cigar Co. has each machine fitted with an exhaust fan, and Messrs. Hartley, of Aintree, have an apparatus over their jam-boiling pans which collects and discharges the steam by means of fans.

CLEANLINESS AND VENTILATION, SHERWIN-WILLIAMS WORKS.

In this respect the precautions taken by the Sherwin-Williams Paint Co., of Cleveland, afford a valuable object lesson. All colour dust is there collected along with the foul air by exhaust funnels freely distributed throughout, and no work is allowed to be done in the dangerous departments in street clothes. Daily shower baths are there obligatory, and the absolute cleanliness of the whole place is assured by periodical inspections by the president, general manager, and general superintendent, the foremen and forewomen of each department being awarded prizes in respect of order, cleanliness, and promptitude. No wonder that in spite of the risks run in such works the management report that they "have no difficulty in maintaining health," adding, "We are very confident that what we are doing for our employees is most heartily appreciated by them. We believe it pays."

Factory Visitors.

A natural outcome of equipping a factory on the lines described is that visitors are welcome. Too many indeed cannot come, and instead of its being considered a matter of favour and the waste of a guide's time for anyone to see over the works, all are proudly welcomed, for what result other than good can come of making known such admirable external conditions of labour? Except the intrinsic value of the products, there could hardly be a stronger recommendation, and the visitors afford a splendid advertisement. In America, this, like many other "points" connected with advertising, is better understood than here, where even when visitors are welcomed, some charge is not infrequently made. In America, on the contrary, the guest departs provided with mementoes, if not with refreshments, and bubbling over with admiration.

The importance of visitors to the Parke-Davis Drug

Factory at Detroit is so well recognized that, instead of leaving them to the care of understrappers, twenty-five heads of departments are always available to show them round. This is not considered lost time, as it keeps those officials in the closest possible touch with all that goes on, for while conducting the party of strangers, the practised eye is noting everything, giving instructions and orders, and answering inquiries, while liability to such inspection at any moment keeps every one up to the mark. A curious feature at these works is that each guide is supplied with a carnation for his button-hole, the supply being maintained all the year round from the directors' hot-houses. The stream of visitors is almost constant, parties being made up in a waiting-room which is also a museum. Special invitations are extended to medical men and students, chemists, and all concerned in the use of their products, none of whom can go away unimpressed by the material recommendations of those products afforded by the inspection.

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The Natural Food Co. goes further still, providing a magnificent lecture hall seating a thousand, in which is given instruction in the uses and advantages of their products, and which is lent free to conventions, the members whereof receive every attention, including lunches of shredded wheat confections. A palatial foyer or reception hall, with reading and writing rooms adjacent, is likewise placed at their disposal, and that of all visitors, who during 1903 reached a total of nearly 50,000. Uniformed guides conduct parties round at stated intervals.

Fred Johnson

The National Cash Register Co. takes a similar pride in showing its "plant," and incidentally what it is doing for its employees, making the factory one of the attractions of Dayton. From fifty to five hundred visitors register their names daily in the reception room, guides starting on trips occupying about an hour, at 9 and 11 a.m., and again at 2 and 4 p.m. At 10 a.m. and 3 p.m. lectures of about an hour's duration are delivered, dealing with the system and output of the factory, the hall being darkened for the exhibition of lantern and kinematograph pictures. In the various departments are hung notices giving information to visitors after the style of an up-to-date museum. Afternoon tea is provided at the adjoining club-house, prominent visitors being entertained to luncheon also at the "Officers' Club." The names of such are given on the bulletin boards in each department for the interest of the employees, and on special occasions, which are fairly frequent, the numerous factory flagstaffs are made use of, bunting being also freely displayed at the entrances. Before leaving, photographs of such guests are taken for the factory magazine, and speeches are called for from them, either to the officers, or to the entire force of 3,500, as occasion demands. Parties of all sorts are welcomed, from schoolboys and girls to bishops in convention, the largest on record being 2,300 members of a provident society brought from Cincinnati by two special trains. The average annual number of visitors is stated to be 50,000. Attention and advertisement are secured by the offer of prizes to classes or schools visiting

RECEPTION HALL FOR VISITORS, NATURAL FOOD CO.

GUESTS AT THE NATIONAL CASH REGISTER FACTORY.

the factory for the best articles on what they have seen. Both here and at the Acme Works, where visitors are equally welcome, wheeled chairs are kept in readiness for those among them who are tired or feeble.

Kindred arrangements on a less magnificent scale are made by numerous American firms, who rightly regard it all as a matter of business. Messrs. Heinz invite all and sundry to see over their works, sample their products, get weighed, and take home a weight ticket and mementoes advertising their goods. In England, Messrs. Lever Bros. have arranged special gangways and galleries through the departments, whence visitors may look down on the various operations without interfering with them, and as many as 60,000 so passed through in the course of last year. Parties are admitted five times a day, at stated hours; once only on Saturdays. Messrs. Rowntree welcome visitors to certain portions of their works, arranging for guides connected with the Social Service Department to take them round, and especially encourage the relatives of employees to come and see the conditions under which they work. Messrs. Huntley and Palmer, of Reading, also pride themselves on keeping their extensive works in such condition as to be able to welcome at any time visitors of any importance. Messrs. Pascall issue a notice in their packets of sweets inviting purchasers to get it signed by one of their customers as an order to view the works between certain hours, as "it must always be interesting to know under what conditions the various articles of food we consume are manufactured or prepared."

Most English firms, however, while welcoming all who have a claim on their consideration, or special parties on special occasions, do not lay themselves out to attract the general public in this way, overlooking the advertisement value of such visits. The Niagara Falls Power Company charges a shilling for the benefit of the hospital fund, to those desirous of inspecting its huge turbines, but they have nothing to show in the way of improved conditions of labour, which is generally the case also with those English firms which derive an income from this source.

OVERHEAD GANGWAYS FOR VISITORS AT PORT SUNLIGHT WORKS.

In the case of many leading English factories and warehouses, there is more than indifference in this matter, as, being manufacturers and purveyors to the trade only, their object is to screen themselves from the general public as far as possible; and where visitors are welcomed, it will generally be found that some proprietary brand is produced, the success of which depends on a public demand. But even in such cases, the average English firm is behind its American competitor, who believes that if he has a good thing to sell, it is worth while making it known. And if it can be shown that even money spent on improving the conditions of labour can rightly be charged to advertising account, let us urge this method in opposition to the erection of sky-signs that benefit no one, or the defacing of Nature which injures all.

IV. WORK

Working Dress.

ARRIVING each morning in tidy street clothes, the fortunate employee in a model factory repairs at once to a dressing-room, where, should the occupation followed require it, a complete change may be effected. Special clothes are sometimes provided by the firm, as in the Van Marken Works at Delft, where every workman is supplied with three costumes, "the patterns of which have been chosen with due regard to safety." They get the washing and mending done at home, the storekeeper being judge as to the time when they should be exchanged for new.

Lead Poisoning Avoided.

In the dry-colour rooms of the various Sherwin-Williams paint factories, the workmen are provided with two sets of "jumpers"—cotton coat and trousers—which they wear together. At night the outer one is washed. In the morning a clean one is put on next to the underclothing, while the inner "jumper" of the day before becomes the outer one. The lavatory is fitted up with spray baths, which each worker is obliged to use daily, being given time by the Company for this purpose.[1] Those who wish may have their underclothing washed at the factory laundry. By the baths the pores of the skin are kept open, so that all impurities are worked out of the system. "Formerly in this department a man lasted only five or six months; now lead poisoning is a thing of the past." The employee gains in having good health, and the firm is rewarded by the men's continuous service, not having to lose time and experience in breaking in new hands. The Patton Paint Company of Milwaukee also furnishes each man with two suits of overalls, at first paying half the cost of washing at a laundry, now the whole at their own plant. Practically the same provisions as to dress and bath exist in Messrs. J. H. Holmes' paint works at Newcastle, where also, in certain departments, time is allowed for washing.

Special Costumes.

Less dangerous or dirty occupations require but an overall, which is usually supplied, if not washed, by the firm. Messrs. Packard and Son, paper box-makers, of Campello, Massachusetts, provide their men with uniform overalls, but, as a rule, this provision is confined to women, whose costumes are less easily changed. Messrs. Heinz' girls are clad in blue wrappers and dainty white caps while at work. Messrs. Cadbury require their girls to change out-door dresses for white holland overalls, the forewomen being distinguished by blue overalls. The material for these is supplied by the firm, in the first instance free, afterwards at a reduced rate, the wearers making them up, and coming in a clean one every Monday morning. In the cocoa departments caps are worn to protect the hair. Each girl is also provided at less than wholesale price with a pair of felt and rubber snow-boots for use in winter. Heavy boots may be replaced in the work-rooms by slippers, a shelf on which to keep them being provided beneath every seat. At the Port Sunlight works a clean costume, with hood where needed, is provided by the firm each Monday without charge, the soiled ones being washed and mended on the premises. The Glasgow Co-operative Bakeries make a similar provision in certain departments. So also do Messrs. Crosfield and Henkel, including hoods to protect the hair of those engaged in handling powdered alkali. Messrs. Hartley provide overalls at cost, which are washed at home, but their use not being obligatory, is not general. The boys of Messrs. Rowntree's gum starch department change on arrival into a costume consisting of vest, holland trousers, and broad canvas belt. Messrs. Burroughs and Wellcome are introducing caps and overalls throughout, white for the girls, blue or other colour for the men, according to their work. Messrs. Lowe Bros., of Dayton, Ohio, supply aprons in their paint rooms, and wash them free twice a week. At the Ferris Works a large stock of umbrellas, waterproofs, cloaks, and rubber over-shoes, are kept ready for the free use of girls going home in unexpected rain, and stockings for the use of those who arrive with wet feet.

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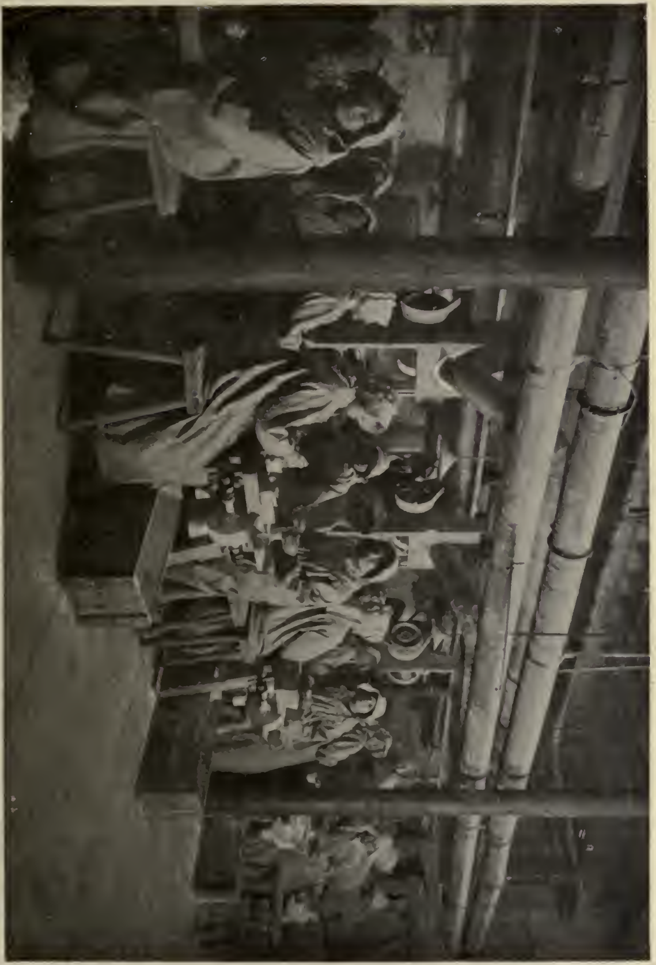
[1] The English law requires the provision of bathing facilities in such works, but as their use is not compulsory, which it can only be in the firm's time, this wise enactment is practically ineffective.

Clothes Lockers.

Whatever system of costume be adopted, a change generally implies the use of dressing-rooms and lockers, though the thousands of girls at the Bournville factory do very well with phalanxes of numbered pegs in a well-heated basement, and racks for wet boots over the hot-water pipes. It says a good deal for the class of girl attracted that complaints of "mistakes" in claiming garments seldom or never occur. Each department has its own section of the vast partitioned room. At the Diamond Match Works at Bootle, a "tally" is

HEATED CLOAK-ROOM AT THE BOURNVILLE WORKS.



COSTUMES WITH HOODS WORN IN ALKALI DEPARTMENT AT MESSRS CROSFIELD'S.

given for each cloak deposited. In the McCormick Works plain wooden hanging cupboards are furnished in each workshop, separate dressing-rooms not having been instituted; though in the Deering Twine Works —now incorporated with them under the style of the National Harvester Company—proper dressing-rooms with lockers are provided for the girls. The Van Marken lockers are of wood, with open railed fronts. Messrs. Lever Bros. provide the square gymnasium locker, and have a specially heated tiled room for drying wet clothes.

But the ideal clothes locker is of wire-work or expanded metal meshes,[1] such have been adopted by the Bullock Manufacturing Co., the New York Telephone Co., the Playing Card Co., the Natural Food Co., the Westinghouse Electric Co., and a large number of other American firms, and by Messrs. Ludwig Loewe of Berlin, who have them periodically inspected by the sanitary officer. In this case the tops are sloped to prevent accumulation of dust. These lockers are practically thief proof, but allow the free passage of light and air, as well as enabling the contents to be seen.

Clothing Club.

Interest in the clothing of employees goes sometimes further than the factory, however, as in the case of Messrs. Pretty and Sons, of Ipswich, who, "realising the fact that women employed all day in the factory have not much time or inclination for sewing at home in the evening," have established a clothing club. Material

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[1] These may be obtained of Messrs. Merritt & Co., 1029, Ridge Avenue, Philadelphia, Penn., U.S.A.

CLOTHES LOCKERS AT THE VAN MARKEN WORKS.

CLOTHES LOCKERS DISTRIBUTED THROUGHOUT THE McCORMICK WORKS.

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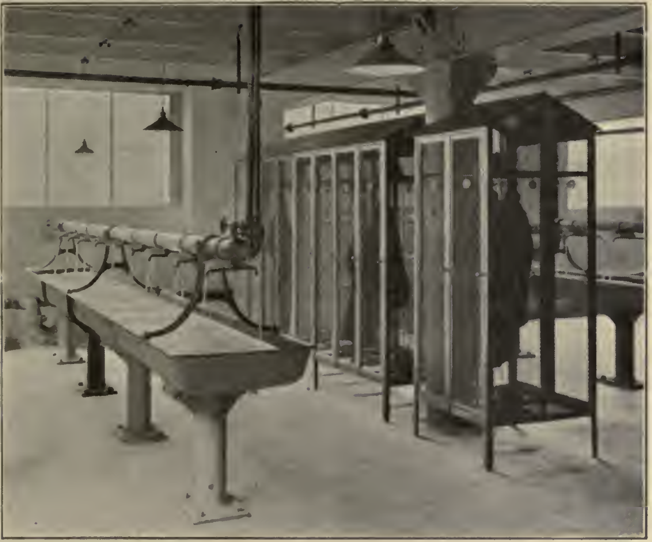
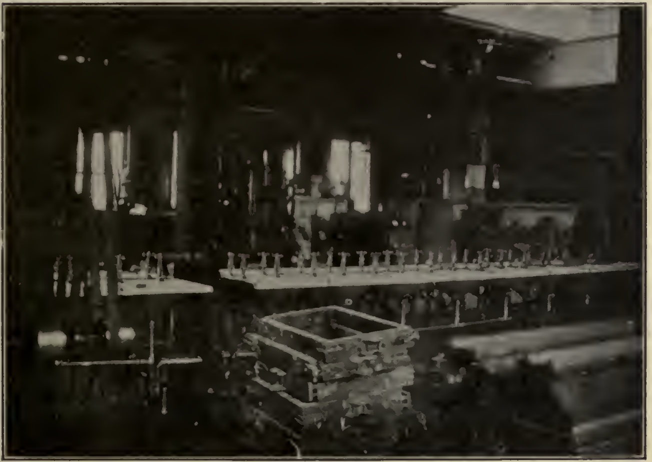
is bought by the wife of one of the partners who makes the welfare of the female workers her special interest, and the work is put out to be done in the town, thus enabling underclothes to be obtained at cost price. This lady also arranges the free loan of maternity boxes, and in countless other ways befriends the firm's employees, acting, practically, as their "Social Secretary."

Washing Facilities.

It is not, however, sufficient to provide lockers, or even dressing-rooms. If those engaged in dirty work are to replace their clean clothes with any satisfaction, there must be something more than a basin and tap in some odd corner; proper washing, and in some cases bathing, accommodation is provided in the model factory. Occasionally, as in the McCormick Harvester Works, at Chicago, each machine shop is furnished with rows of marble basins supplied with hot and cold water, soap and towels, set down right among the machines, but up-to-date lavatories are being fitted throughout, showing that it was found "worth while." The Deering Works have good lavatories supplied twice daily with towels. Less expensive washing troughs are similarly placed by the Cleveland Twist Drill Co., which has shower baths also in the tempering department; and the Wisconsin Bridge and Iron Co., of Milwaukee, provides dressing-rooms with locker and washing conveniences. The Pope Bicycle Manufacturing Co., of Hartford, Connecticut, keeps warm water flowing in a trough past rows of lockers, each of which is furnished with a cold-water tap. Even in the forty mining camps of the Colorado Fuel and Iron



OPEN METAL CLOTHES LOCKERS AND SIMPLE WASH-TROUGHS AT THE LUDWIG LOEWE WORKS.



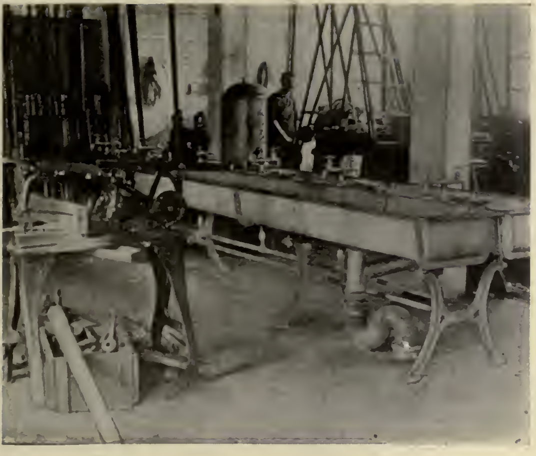
WASH-BASINS IN THE McCORMICK WORKSHOPS.

Co. are to be found well-fitted wash-rooms, setting an example to many a more civilized community. The Cleveland Cliffs Iron Company similarly provides a "changing-house" for its miners, containing shower baths, wash-basins with hot and cold water, racks to dry the mine clothes, lockers, and lunch room.

Baths.

At the Bournville factory large swimming baths for men and women are provided, and the Natural Food "conservatory" contains fourteen rooms devoted to baths, each finished in Italian marble and mosaic, fitted at a total cost of over £20,000: the baths as well as the wash-rooms may be used in the firm's time, twenty minutes being allowed for this purpose; weekly in winter, twice a week in summer; hot water, soap and towels are furnished free. So again the "N. C. R." and Weston Companies, whose bath-rooms, like everything else, are beautifully fitted, if not quite so extravagantly. Every building has both tub and shower appliances for the use of which employees are allowed the same time as in the last-mentioned case. The Weston "individual" wash-basins are unique, rows of them standing on pedestals forming the waste-pipes. At Westinghouse Works there are a thousand wash-bowls distributed throughout the works. The Cleveland Telephone Co. also has roomy bath-rooms for the girls. Even a "boot-black" is kept on the premises to assist in "maintaining appearances."

Probably the first firm in the United States to establish baths in its factory was the J. H. Williams Co., makers of drop-forgings, of Brooklyn, who did so in 1893. These are provided in an added storey

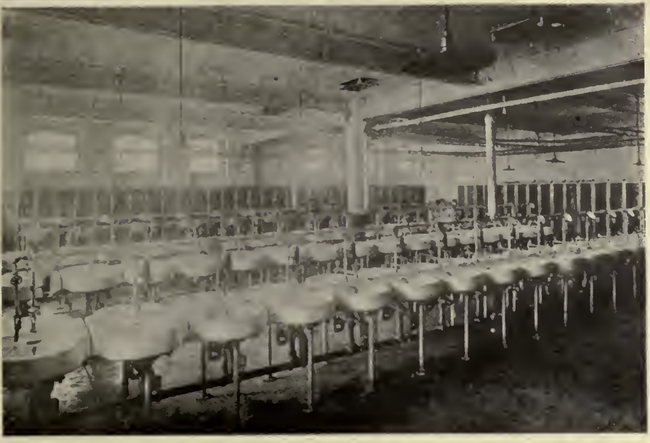


WASH-TROUGHS IN THE CLEVELAND TWIST-DRILL WORKS.

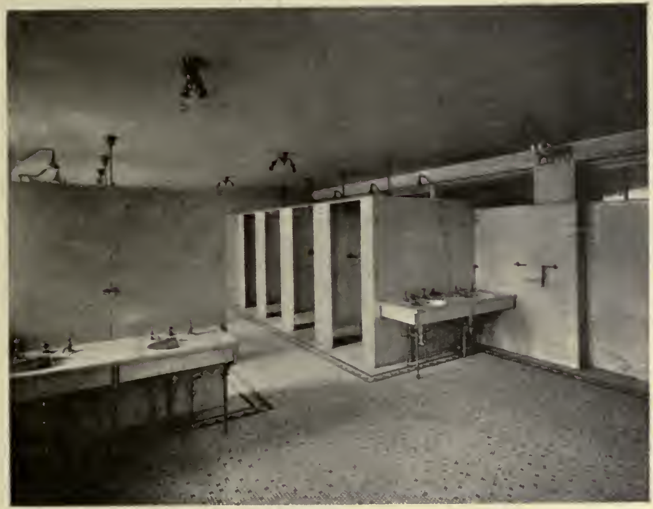
THE COLORADO FUEL AND IRON COMPANY'S WASHING FACILITIES FOR MINERS.

fitted with a row of shower-baths, washing troughs with head douches over, and a tub, wringer and drying chamber for clothes, as well as lockers. Except during summer, however, it has not been found that the majority of the three hundred workmen avail themselves of the opportunities thus afforded, though many do so in the dinner hour, as well as before leaving at night, some having facilities at home, and others "not having acquired the habit in early life."

The Cheney Silk Mills at South Manchester, Connecticut, provide free baths for their 2,500 employees, thirteen baths attracting in the first eight months 10,400 bathers (monthly average 650 in winter, to 4,300 in August), and in the first three years 56,000. The Sherwin-Williams arrangements have been mentioned already, and many other American firms, such as the Bullock Electric Co., provide shower baths, the most popular form over there. The Farrand Organ Co. of Detroit allows its machine hands fifteen minutes to wash up before going out. The American Brake-Shoe and Foundry Co. and Messrs. Ferris Bros. allow free use of their bathing facilities for a reasonable time in work hours, towels included. The Hygienic Chemical Co. of Elizabethport, N.J., allows twenty minutes once a week, and the baths are available free at other times. The Roessler and Haaslacher Chemical Co. of Perth Amboy, and the Hyers Machine Co. of Salem, N.J., are also among the concerns providing free baths. The Solvay Process Company has installed "a perfect system of baths" in its new works.



"INDIVIDUAL" WASH-BASINS AT THE WESTON ELECTRICAL WORKS.



LAVATORIES AND BATH-ROOMS OF THE NATURAL FOOD COMPANY

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In Germany the provision of baths, etc., is more general. At Messrs. Krupp's mines near Hanover there is free accommodation for 1,100 miners a day in twenty-eight shower-baths, erected at a cost of £1,000.

DRESSING-ROOM AT THE HEINZ WORKS.

Similar facilities are provided in nearly all the different works of that far-seeing firm; tubs, shower or steam baths at various places. For the first two the charge is 10 to 15 pfgs. (1¼d. to 1¾d.), and for the last a shilling. Baths and laundries are also provided at the Bochum Steel Works, near Essen. The Spindlers of Cöpenick, near Berlin, have instituted an elaborate system of baths for the 1,000 or so employees at their dye works on the Spree, the average daily attendance at which is 120. Free bath-houses on the river with swimming instructors are also provided for both sexes, and there is a free laundry ; while for a small charge, tub, shower, steam, hot air or sitz baths may be indulged in.

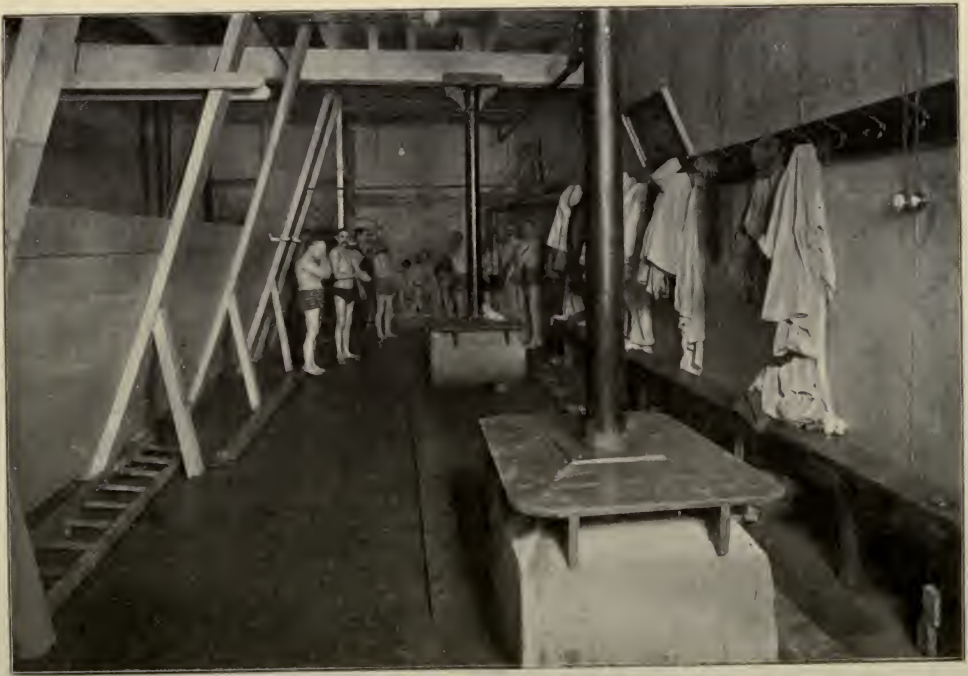
The Badische Anilin- & Soda-Fabrik, of Ludwigshafen-on-Rhine, makers of coal-tar products, employing 7,500 men, has provided no less than forty-five bath and wash-houses in connection with their works, including 529 shower baths, the use of which before leaving is compulsory in the colour departments ; each man has his own place and locker ; soap and towels are free. At certain times the baths are used by other workmen, in all cases in the firm's time. Another bathing establishment, free to the wives and children of all engaged in the factory at least two years, has been built in the workmen's colony at Ludwigshafen, with six tub and eighteen shower baths. The bathers averaged 148 a day in 1903, at a cost to the company of 2d. each. Messrs. Henkel of Düsseldorf make a warm douche compulsory in their alkali works, once a week in winter, thrice in summer, providing free towels and bath caps : all are moreover enabled to wash to the waist after finishing work.

At the leather works of Messrs. Heyls, at Worms, nearly 100,000 baths were taken in the firm's time during one year by the 4,000 employees. Herr Brandts, of München Gladbach, charges rather over

½d. for each bath, for the benefit of the relief fund, allowing twenty-five minutes of working time for the purpose. The Carl Zeiss optical glass works at Jena are fitted with cold, vapour, shower, and massage baths, for the use of which half an hour is allowed free weekly to all. Messrs. Peters (alpaca weavers), of Elberfeld, have free showers; other baths charged 2½d., to the assistance fund, and a steam laundry 5s. per quarter per household, the deficit being made up by public washing. Among other German firms making similar provision may be mentioned Messrs. Ten Brink (Spinning Factory), near Constance, the Marienhütte Iron Works, the Waldschlösschen Brewery, and Messrs. Ludwig Loewe, who have troughs with hot and cold jets.

In France quite a number of leading houses set a good example in the matter of baths. Among these may be mentioned the Solvay Chemical Works (which provide mineral as well as plain baths), MM. Menier (who have also laundries), MM. Seydoux et Cie's Woollen Mills, MM. Montrambert et Cie, the Fanier Shoe Factory at Lille, the Baccarat Glass Works, the Thaon Dye Works near Épinal, the Gouin Construction Co., of Paris, the Orleans Railway Works, and some of the Government tobacco factories.

In Italy similar provision is made at the Rossi Woollen Mills at Schio; and in Hungary by the State Iron Works at Diós Györ, where about ½d. is charged for an ordinary bath, and 1d. for a Turkish or steam bath. In Holland the Van Marken factory has not only hot and cold douches for the men, but a medicinal bath as prescribed for use by the doctor.



SIMPLE BATHING FACILITIES AT MESSRS. JACOBS' FACTORY.
(*Side of Swimming Trough seen on left.*)

INGENIOUS SWIMMING TROUGH AT MESSRS. JACOBS'.

Baths and laundry have been established by Mijnheer Molijn in his Varnish Works at Nunspeet, and by the Brothers Stork of Hengelo, engineers. In Russia, where the all-cleansing steam bath is in vogue, the Yaroslav Mills have provided a large two-storey building, with accommodation for both sexes. Five days of the week the building is open to bathers from 5 a.m. to 8 p.m., being devoted the other two days to the washing of clothes, which is not allowed to be done in the houses.

In our own country Messrs. Lever Bros. place free shower baths at the disposal of their men and boys engaged in dirty work, for use before leaving; and Messrs. Pretty and Sons provide ordinary house baths, in charge of a special attendant, for use by the girls during factory hours on payment of a penny, and after hours by the mechanics. In the bakery of Messrs. Jacobs' Biscuit Works there are douches and a foot trough to be used first, then an ingenious swimming trough of lead-lined wood, some 40 feet long, standing above the floor, wider at the top than at the bottom, with room to swim in one direction to steps down at the other end. The idea, due to Mr. W. J. Purdy, one of the managers, came from his own enjoyment of a run to the sea for a dip before lunch after the hot bakehouse. Messrs. Burroughs and Wellcome have one bath at the works for those engaged in dirty work, and a number for both men and women at their club near by. Glazed earthenware wash-basins, with soap and towels, are freely distributed throughout the factory.

Messrs. Rowntree have fitted up a shower bath to accommodate eight at a time, in a room with wash basins and lockers. Messrs. Thos. Mason and Sons, of Ashton-under-Lyne, provide both shower and swimming baths. Messrs. Brotherton & Co., of Wakefield, have fitted ordinary house baths in their chemical works, but few of the workmen avail themselves of the opportunity. The Diamond Match Co., though not providing baths, have ample washing accommodation, the use of which, also that of the nail-brush, is compulsory before meals, clean towels being furnished twice daily. At Messrs. J. H. Holmes' works baths, and glazed earthenware troughs on iron legs, with overhead water supply, are provided, and

SANITARY ACCOMMODATION AT THE TABLOID WORKS.

washing sinks of glazed earthenware to match the wall, as also at the Glasgow Co-operative Bakeries. Messrs. Coats of Paisley provide hot baths for 2d. Messrs. Cassell and Co., Limited, have especially convenient tiled lavatories in a built-out addition to their Ludgate Hill Works. One of the earliest examples was the erection of baths and laundries at Saltaire.

Intervals of Work.

Cleanliness itself, no doubt, imparts a certain freshness to the worker, but it is of equal importance to afford opportunities for those engaged in sedentary or routine operations to refresh themselves by a short break in a long stretch, for exercise if not for food. Experience has shown that troops halting ten minutes in every hour walk further in the day than those kept constantly moving. The Chicago and Cleveland Telephone Companies allow fifteen, and the New York Telephone Co. twenty, minutes' rest twice a day to the operators, who, in the latter case, are even allowed to shop occasionally without any deduction being made from their wages. Messrs. Debenham and Freebody, of London, allow the clerks in their country order department, whose heavy time commences towards the latter part of the afternoon, an hour's leisure after dinner, which may be enjoyed in the neighbouring parks or in a recreation room on the premises, according to the season and weather. The Natural Food Company allows fifteen minutes for the girls, morning and afternoon, as well as five minutes extra on arriving and departing, making forty minutes off every day without deduction. Messrs. Croft and Reed of Chicago, soap makers, also arrange for a fifteen minutes' recess twice a day.

In laundries and elsewhere that work commences at six or seven it has been found worth while calling a halt about nine for refreshment. The Willimantic Thread Co. used to furnish the younger workers with light food free at that hour, and at 9.30 the Garlock-Frazee Laundry, of Cleveland, serves out tea and coffee free, to the manifest improvement of subsequent work. The Diamond Match Co. supplies free coffee to those arriving before 7 a.m.

At the National Cash Register works ten minutes' recess is allowed morning and afternoon, during which physical drill or calisthenics is practised under trained instructors. Herr Brandts allows his younger weavers half an hour off, morning and afternoon, and a quarter of an hour during the latter for coffee. The Badische Anilin- & Soda-Fabrik affords intervals of fifteen minutes at 8 a.m. and 4 p.m. At the Ferris Corset works (350 employed, of whom over 300 are girls), half an hour's interval is allowed morning and afternoon, when light refreshment may be obtained if desired.

Messrs. Thos. Adams & Co., lace-makers, of Nottingham, allow a break after 10 a.m., when a hawker visits the warehouse with refreshments approved of by the management, and again after 4 p.m., when batches of girls go down to the tea-room in turn to partake of their own supplies. The men get a free tea from 5 to 6. Messrs. Hazell, Watson, and Viney also provide five o'clock tea and coffee at their works. One Lancashire cotton mill provides its workers with four o'clock tea at a cost of a half-penny each, which includes a slice of bread and butter. At breakfast and dinner times they are supplied with a small jug of milk each at a penny a week. Messrs. Rowntree permit delicate girls to leave their work for ten minutes at 10 a.m., when tea or milk and bread and butter are provided for them in the dining-room.

MORNING COFFEE
IN THE GARLOCK-FRAZEE LAUNDRY.

A similar arrangement is in force, morning and afternoon, at the Waldschlösschen Brewery, where each child employed is given during the afternoon a cup of milk from the company's farm, which also supplies milk at a reduced price to the families of employees with children. The Bochum Steel Co. maintains 120 cows on its farms for the benefit of its workers, and the Yaroslav Mills devote a model dairy, supplied by 100 cows, to a similar purpose. Messrs. Colman the mustard makers, of

Provision of Milk.

Norwich, furnish their employees with milk at the wholesale price of 3d. a quart, week-days and Sundays, at 7.30 a.m., the average annual consumption amounting to upwards of 10,000 gallons among some 2,400 work-people and their families. The Bessbrook Spinning Co. maintains forty cows, the milk from which is furnished to its employees at 2d. and 3d. a quart, according to season.

At Messrs. W. H. Holmes and Sons' "Castle Brand" Paint Works, a glass of milk is supplied to all handling white lead or noxious colours—such as reds containing oxide of lead—morning and afternoon, that they may maintain a well-nourished resistance to the insidious danger. Messrs. Holmes have, moreover, adopted an invention of Messrs. Cookson and Co., Ltd., a local white-lead firm, and supply each man daily with a sodium sulphide lozenge in the pleasant disguise of a peppermint.[1] The effect of this is to reduce any poisonous lead encountered in the gastric fluids to a harmless sulphide. All in touch with oxide of lead in the colour departments are inspected once a fortnight by the doctor, a precaution which also prevents the engagement of those already infected. The Sherwin-Williams Co. attains the first object by providing one free hot dish every day.

At the Badische Anilin- & Soda-Fabrik all workmen exposed to high temperatures are supplied with free coffee during work, to prevent the ex-

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[1] Four ounces of sodium sulphide to twenty-eight pounds of lozenge.

Drinking while at Work.

cessive use of cold water. At the Hungarian State Iron Works tea is furnished in the shops during winter for about 1d., and beer in summer for 1¼d. So, too, at the Krupp Works, where, unfortunately, "nips" of spirit are also served out. Messrs. Colman provide in summer a cooling drink, called "stoko," at 2d. a gallon, or fruit juice and water at 8d. a gallon. Oatmeal and lemon water has been supplied gratis to employees during the summer time by a good many English firms, but it is seldom either tasty enough or cool enough to prove very tempting, in which cases it wholly fails to reduce the consumption of alcohol. Herr Brandts offers a premium of a shilling a month to any male employee over sixteen years of age, who, at the end of each month, places in a closed box a signed declaration that during that time he has drunk no form of alcohol. The result is that about a third of his men receive the premium, and "the confidence thus shown by the firm has been fully justified."

The provision of drinking water in each department, as at Messrs. Cadburys', should hardly need insisting upon, but it is by no means general, though more common in America, where during summer in the best factories it is kept iced, as at the Acme Paint Works, or the J. H. Williams forge, at which it is filtered and iced at the top of the building before being distributed throughout by pipes. The Westinghouse Electric Co. has drinking founts attached to the steel columns of its buildings, fifty feet apart, supplied from driven wells with water analyzed monthly. The Natural Food Co, first sterilizes, then filters, and finally re-sterilizes its drinking water.

Messrs. Crosfield allow no cold water to be drunk in hot weather, providing instead meal and water, or tea (hot or cold) free of charge in all departments. A similar precaution taken by the Hamburg Rubber Comb Co. resulted in almost complete immunity at the works from the cholera epidemic of 1892. Messrs. Brunner, Mond & Co. keep a coffee-stall going in the works throughout the twenty-four hours, so that the night force is as well provided for as the day.

Rest during Work.

One other detail of the workroom which may seem to many a small matter is really of great economic importance. The waste of energy involved in keeping workers on their feet when they could do as much seated, or even by providing unrestful seats, is seldom appreciated. Yet strain on any set of muscles not engaged in the work is necessarily waste, and should be saved, for even if, at immense cost to the worker, the output is of sufficient quantity, its quality must suffer, and ere long the worker breaks down. It is evident that the less the strain on muscles not employed in the work, the greater will be the energy at the disposal of the workers. The introduction of seats is therefore becoming general in stores and factories under progressive management, the best providing those whose occupation is sedentary with chairs having adjustable backs and foot rests. This is done by the H. J. Heinz Co., the "N. C. R." Co., the Dayton Telephone Co., and the Natural Food Co., while ordinary chairs are furnished by the Douglas Shoe Co., of Boston, by Messrs. Lever Bros., and by many others. The Weston Electrical Instrument Co. furnish high-backed stools for their women operators, running on rails when several machines are supervised by one.

SEATS FOR THE NATIONAL CASH REGISTER GIRLS.

The value of this provision behind the counter as well as before it has at last been recognized in this country, but even when seats are to be found, opportunities for their use are often lacking. This adds to the importance and value of rest-rooms and recreative intervals in shopping establishments. It is as absurd to expect good results from salesmen or saleswomen when "fagged out" at their by no means easy task in busy times, as for a purchaser similarly situated to drive a good bargain, and it is therefore of even greater moment to the business to attend to the comfort of its agents than to that of its customers.

But nerves need rest in the factory quite as much as muscles, however little the fact seems to be recognized, and it is a real pleasure to come across a firm that does recognize it. Messrs. Joseph Crosfield and Sons are gradually eliminating all noisy machines and adopting more ingenious contrivances dispensing with clatter. Let every mill-owner take note. Noise there must be with any machinery, but save in sewing machines and bicycles, few inventors seem to have been tempted to apply their skill to reducing it to a minimum.

RECREATION HALL AT MESSRS. FERRIS BROS.

Rest-Rooms.

So far the worker in good health. There come times, however, when from accident, debility, or over-strain, rest is essential. For this, too, provision is made by the most enlightened firms, especially by those employing large numbers of girls. Many of these rest-rooms are cosily furnished with piano and magazine tables, as well as with couches and easy chairs, so that any may use them in the intervals from work, as at the Bon Marché of Paris. Mr.

Legler, of Dayton, Ohio, a shirt-maker, has furnished a most attractive club-room for his girls, with piano, pictures, and palms; its tables supplied with magazines and good books by a travelling library. Messrs. Ferris Bros. have done the same, the girls keeping the place supplied with flowers. The Weston Company provides a "cosy corner" for this purpose.

REST-ROOM FOR GIRLS AT LUDLOW MILLS.

Sometimes rest-rooms are combined with dressing-room accommodation, as by the Cleveland Telephone Co.; at the Heinz Factory; by the Western Electric Co., of New York, which here also furnishes handsome tables for the use of its "Lunch Club"; at the Halle Bros.' Store in Cleveland, the top floor of which is devoted to this and other conveniences, such as dining and reading-rooms, equipped by the firm and entirely maintained by the employees. Rest-rooms are also to be found at the Ludlow Mills, the Deering Twine Works, Messrs. Chas. Eisenmann's Works, and the National Cash Register factory, where half a dozen beds and as many long chairs are always available, with bath-rooms adjoining. This is under the care of the girls' superintendent, who is quite prepared to keep the girls all night, if need be, especially those who have only boarding houses to go to. A nurse is also on the spot. An operator in any of the American Telephone Exchanges referred to who feels indisposed can be at once relieved by another in attendance for the purpose, and in the first named any one falling ill is sent home at the company's

GIRLS' REST-ROOM : MESSRS. BURROUGHS AND WELLCOME.

expense in a carriage with another girl, as soon as she is fit to leave the rest-room. Messrs. Burroughs and Wellcome have delightful rest-rooms in their club-house, and at the works one with a made-up bed.

BEDS READY FOR USE AT THE HEINZ FACTORY.

Others are devoted to invalids, as those of the Cleveland Hardware Co. and Messrs. Cadbury Bros.

In both instances every provision is made for emergency cases, but in the former also for slight operations, a glass-top surgeon's table and hot and cold water supply being included in the fittings. A rattan couch with blankets here serves as temporary bed, but at Messrs. Heinz's and Messrs. Cadburys' there are made-up beds, kept aired, in the latter instance with the additional luxury of a radiator at the foot.

INVALID REST-ROOM: MESSRS. BURROUGHS AND WELLCOME.

Medical Attendance.

A forewoman or a trained nurse is in charge, and the doctor's office is next door. He is in daily attendance, his services being free to all, medicines supplied at 6d. a bottle. Three nurses are retained to visit girls absent from work, daily notice being given to them by the forewomen, and there are male sick visitors for the men. Hot-water bottles, baths, and surgical appliances are kept on loan; grapes, etc., are supplied free from the vineries and gardens of Bournville Hall, and periodic health talks are arranged, besides

MADE-UP BED WITH RADIATOR AT FOOT, IN GIRLS' EMERGENCY ROOM AT BOURNVILLE WORKS.

ambulance classes. Appliances for first-aid are to be found in every department, as well as some one qualified to render it. The sick are thus made the special care of the company, which provides handsome allowances from a special fund, in view of which applicants for work are examined medically; while all hands that touch food in the process of manufacture have to "pass the doctor" monthly. How one can appreciate the flavour of their products after that! Those precluded from work by infection in their homes are maintained on full pay. Ambulance brigades are found here, at the Lever, Fry, and Rowntree Works, and in a large number of our leading factories, in which the names of those in each department qualified to render first-aid are prominently posted up therein. At the ambulance station at Messrs. Crosfield's works, each bottle, etc., is labelled not only with particulars as to its contents, but first, and most distinctly, as to uses and method of application.

Messrs. Rowntree have lightened the task of their works doctor by engaging the whole time of a dentist to attend to the teeth of their employees. All operations are free, but 6d. is charged for gas, if desired. The Diamond Match Co. also has a dentist daily on the spot as well as a doctor, both of whom keep systematic watch for symptoms of injury from phosphorus. The attendance of either is free, and so are the tooth-brushes and powder served out to all, the use of which is compulsory, with the result that there "phossy jaw" is unknown. A matron is employed in these works to look after the comfort of the girls, a very excellent plan, adopted also by Messrs. Heinz and by the Chicago Telephone Co. Messrs. Jacob and Co. supplement free medical attendance and medicine at 2d. by inquiry into the state of the homes of the workers, to minimise risk from infection. Free medical attendance is also supplied by Messrs. Brunner, Mond & Co. and

AMBULANCE CUPBOARD PROVIDED BY MESSRS. LEVER BROS.

Burroughs, Wellcome & Co. At the Bessbrook Mills, in Ireland, a subscription of 1d. a fortnight covers medical advice, medicines, nurse, and free midwifery attendance. At Messrs. Debenham and Freebody's the doctor attends daily without fee, and the matron in charge of those "living in"[1] is a qualified hospital nurse. The Bon Marché of Paris also provides free medical advice daily, and maintains a free infirmary, contributing £4 towards the confinement expenses of lady assistants, and £3 12s. towards those of workers.

EMERGENCY HOSPITAL AT THE MCCORMICK WORKS.

The McCormick Co. requires for its 6,000 to 8,000 employees not only two physicians and a staff of nurses, but a well-equipped emergency hospital at the works, which cover 150 acres. Accidents average five-and-twenty a week, of which one may be serious, but 95 per cent. of these are due to carelessness, as every effort is made to do more than the law requires in the use of safety coverings, etc. An attorney is engaged to settle all claims liberally on the spot, according to his judgment of the case. Messrs. Van Marken also have arranged a special "dressing-ward," furnished with appliances as advised by the surgeons, for immediate treatment in case of accidents. At the Marshall Field Store in Chicago a room is fitted up as an emergency hospital, and half-pay is allowed to all away from work by reason of illness. Messrs. Tangyes, Ltd., employ both a Works Doctor and a Sick Visitor, who also assists in the distribution of clothes, food, etc., to widows and orphans. The Yaroslav Company maintains for the benefit of its employees an elaborate system of hospitals and isolation buildings, erected in a park, with full staff of physicians, nurses, etc. The Colorado Fuel and Iron Co. appoints a doctor to each of its eighteen mining camps, who also acts as "Social Secretary." The Weston Company, which has fitted up a "hospital" at its works, complains of the little use made of it, but in view of all the care taken of the workers, this is hardly to be wondered at. The Cleveland Cliffs Iron Company owns a hospital, but lets it out "to a firm of doctors selected by the company, with care that they are practitioners of character, experience, and ability, and also of kindly nature and imbued with the humanitarian spirit." A monthly contribution of a shilling secures all its privileges, including attendance on all members of a family, and medicines, etc.

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[1] In deference to changed conditions and the wishes of the men, the number of those "living in," that is, on the premises, is being gradually reduced. In this case it is confined to those who have to commence work at 6.30 a.m. or soon after, and the apprentices—about two hundred in all, out of over a thousand.

V. MEALS

GOOD work, of whatever nature, ultimately depends on food not only good in quality, but adequate in quantity and properly consumed under favourable circumstances. A great deal may be done on a cold lunch from pocket or can, partaken of in a yard or out-house, or even down a coal-mine, or beside the stilled machinery of the stuffy workroom. But while the first two circumstances do at least include fresh air, none of them are ideal, and all are capable of improvement to the advantage of employer as well as of employed. There can be no doubt that, regarded as mere machines, the same "hands" produce better work, and therefore prove more economical, when "stoked" under better conditions. This has, indeed, passed from the realm of theory, for it is the invariable experience of firms which have made proper dinner provision for their workpeople, and who ascribe so large a portion of their success to this and kindred measures. This has apparently been more fully recognized on the Continent than either in England or America, though there the provision is seldom elaborate, and elsewhere are to

Value of Proper Conditions.

be met the most prominent examples. In France it has been made obligatory on factories to provide dining quarters distinct from workrooms or lavatories.

Messrs. Menier have separate dining-halls for men, women, and both together, seating in all 800. Their menu runs as follows: For 1d. per portion, soup, bread, vegetables, cheese, coffee, or dessert; for 2d., meat, fish, or poultry; wine, 1d. and 1½d. The Bon Marché at Paris has elaborate dining arrangements.

Factory Catering in Germany.

Conspicuous among German instances are the dining-halls which Messrs. Krupp provide at most of their works. To these the employees generally bring their own food, cooking it or heating it on spacious ranges when required, which is the usual Continental custom. Hot coffee, milk, and rolls are, however, furnished at cost morning and evening. Hot water is always free. For the officials at Essen a commodious restaurant is furnished in the handsome club-house, and for the workmen there are six dining-rooms. Meals are conveyed to the departments of the immense works—a town in themselves—by means of specially-fitted waggons. The food itself is carried in a sort of handled twin-pots, known as "henkel-männer," each side of which has a close-fitting lid. At the Gruson Works, in Buckau, Messrs. Krupp provide three dining-rooms for a thousand men. The neighbouring Bochum Steel Works, which have adopted most of Messrs. Krupp's methods of industrial betterment, also dine

ONE OF MESSRS. MENIER'S DINING HALLS.

HEATED CARS DISTRIBUTING WORKMEN'S FOOD, COLLECTED FROM THEIR HOMES, AT MESSRS. KRUPP'S WORKS.

and sup a thousand men in hall, an orchestrion playing the while.

The Badische Anilin- & Soda-Fabrik, of Ludwigshafen-am-Rhein—coal-tar products—has laid out £1,700 in a dining-hall and kitchen for those of its 7,500 men who cannot go home to the mid-day meal, providing seats for 600. The regulation German soldier's dinner of six ounces of beef and a quart of soup and vegetables is supplied for 2½d., and coffee without milk or sugar at a farthing a pint. The cost of such a meal is, however, about 4d.

WORKMEN'S DINING-ROOM AT MESSRS. KRUPP'S WORKS, WHERE THEIR FAMILIES MAY JOIN THEM AT MEALS.

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so that the company has to meet a considerable deficit on the daily average of 600 dinners and 500 gallons of coffee. In the evenings the dining-hall serves for recreation, and there is a second hall outside the factory where those who have their dinners brought to them may take their meals with members of their families. A restaurant for 150 is also provided in the club-house built for the officials of the company. Messrs. Haniel and Lueg, engineers, of Düsseldorf, provide a garden for the use of their employees during the dinner-hour, to which their families also are admitted.

Messrs. Villeroy and Boch, who in their numerous pottery and tile works employ 4,500 men, furnish their employees with such remarkably cheap meals that it must mean a considerable addition to wages. Commodious dining-halls have been built for the various classes, with sleeping accommodation above for bachelors. Thus the young clerks get dinner and supper for a shilling daily: workmen, first class, breakfast (coffee, bread and butter) 1¾d.; dinner (soup, beef, and stewed fruit, second meat and two vegetables, and half a pound of bread) 6d.; supper 3d.; in all just under 11d. a day; second class, the same, but with only one meat, 9½d. a day: boys and girls, breakfast 1¼d.; dinner (soup, meat, and two vegetables) 3d.; supper 1¼d.; or 5½d. a day. The meat allowed for the first two classes weighs half a pound, that for the other two six and a half ounces. Each employee is provided with a card on which attendances are marked, and the amount is deducted from the week's wages. There are also heating appliances for food from home in separate halls, where supplementary items can be purchased cheaply for men, women and children.

Similar accommodation is provided for 1,200 in two halls by Messrs. Spindler, who also supply the food at low rates; at the Heyls Works at Worms, where coffee-houses serving at cost price have been established; at the Ems Lead and Silver Works; by the Société Anonyme d'Industrie Textuelle of Mühlhausen, with two refectories; by Herr Brandts, and other enlightened manufacturers. The Carl Zeiss Concern feeds its juvenile workers free of charge.

In Holland.

In Holland the Brothers Stork, machinists, of Hengelo, have established a café and kitchen under a workmen's committee, and the Van Marken factory is furnished with a comfortable refreshment and reading-room for those who cannot get home to meals, where, on a balcony overlooking the park, the viands brought from home may be eaten, and supplemented by coffee purchased there. For those engaged in night work, the room below is furnished with camp-beds for rests after meals.

In Russia and Hungary.

In Russia the Popoff Works, near Moscow, are furnished with ample dining- and tea-rooms, with billiards, papers, books, etc., wherewith to pass the latter part of the meal hour. In connection with the Yaroslav Mills there is a large tea-house and restaurant, especially intended for the single men. The Hungarian State

Iron Works possess what is perhaps the largest dining accommodation of any, seating 4,000 for dinners costing from 3½d. upwards, during which selections are played on the great organ. Such a sight would not be soon forgotten.

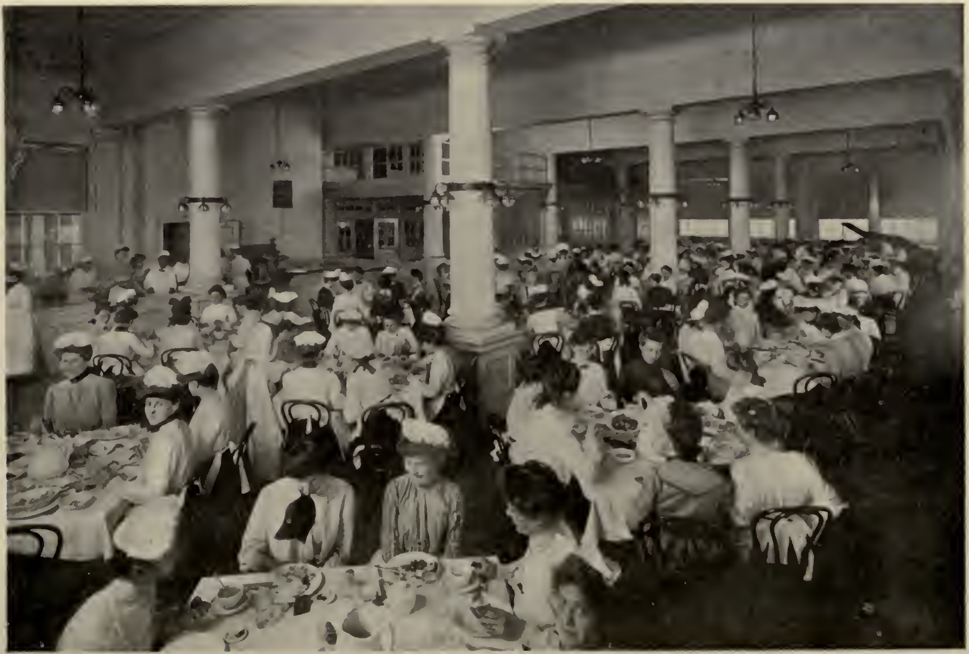
REFRESHMENT ROOM AT THE VAN MARKEN WORKS.

In the United States.

The names of the leading firms in this connection across the Atlantic have already become familiar, adequate provision for meals holding a foremost place in plans for industrial betterment. But in America some employers go further, and provide a part, or even the whole, of the meals, which thus represent an important addition to wages, which are in no case lowered on this account. The Natural Food Co., for instance, gives 350 young women free lunches in a spacious dining-room on the top floor of the "conservatory." But then, as purveyors of food-stuffs for which especially nourishing properties are claimed, they doubtless see in the plump faces and pleasant smiles which result a valuable recommendation of their products. The 150 men obtain substantial dinners for 5d. at a "lunch-counter."

GIRLS DINING AT THE NATIONAL CASH REGISTER WORKS.

The National Cash Register Co. charges only the nominal sum of a shilling a week for a simple warm lunch to some hundreds of its women workers in a tasteful and well-fitted apartment. As the "lunch" consists only of tea, coffee or milk and one hot dish, the girls bring with them whatever else they like to



FREE LUNCH AT THE NATURAL FOOD "CONSERVATORY."

eat cold. The Company calculates to lose three halfpence a head on each meal served, and to gain nearly twice as much from better work during the afternoon, so that the investment is considered a sound one. An hour and twenty minutes are allowed for the meal, and the room contains a piano and a sewing machine wherewith to pass the spare time, or there is the comfortable rest-room to which to repair. Some hundreds of the men are similarly provided with hot meals at a charge per week *based upon the salary of each individual*, a unique arrangement. Supper is provided free for all working overtime. There is also a well-fitted "officers' club," where the officials, the heads of departments and assistants, and the foremen and assistants, numbering over a hundred, lunch and rest.

The Cleveland Bag Factory, where till recently the workers lunched among the machinery, now devotes the entire second floor to the comfort of the employed, including a fine dining-room. Here the officers dine at about eighteen-pence a meal, the foremen at a shilling, and the remaining workers at sixpence. The Cleveland Hardware Co., while providing a lunch-room for the "office force" only, has arranged ingenious folding tables for the passage-ways, so that the workpeople may eat in comfort. The food was formerly supplied below cost by the firm, and was carried through the workshops in still more ingenious partitioned boxes with hot-water compartments, wherein it was kept hot. In order to avoid the necessity of employing a special staff to wash the dishes, paper plates were supplied, together with enamelled pint mugs, the men bringing their own knives and forks, and keeping these utensils in small cupboards near their work. The orders had to be given at the kitchen by 10 a.m., and from each group of eight or ten one man not in charge of a machine was allowed five minutes before leaving-off time to fetch the box and coffee. The loss on this beverage, at a halfpenny a pint, was counterbalanced by a profit on "pies and other things that might be termed luxuries," but the loss in other respects was £10 to £12 a month. The total cost of a good meal was 5d. or 6d. Payments were made by tickets, the

"N.C.R." OFFICERS' CLUB.

value of which was deducted from each man's wages. This worked excellently as a system, but when after three years' trial only 100 to 150 out of the 750 employed were found to be availing themselves of it, the whole scheme was abandoned. Subsequently an unsuccessful attempt was made by the men themselves to "run" a restaurant with the free use of the firm's plant, no more than 35 patronising it. The chief reason of failure was that so large a proportion of the men, principally the lowest grade of Polish labourers, lived in boarding houses which would make no allowance for meals taken out. The clerks, however, were glad enough to purchase meals from the works kitchen, which led to their being provided with a proper dining-room.

The Sherwin-Williams Co., also of Cleveland, furnishes, as has been said, one hot dish free daily, which the employees can supplement from a comparatively low-priced menu, or by things brought from home. Their 5d. dinner consists of soup, meat, potatoes, bread, butter, and tea or coffee. About half their people avail themselves of this system, sitting down in batches, so that the work never stops. The men and girls serve the tables a week at a time each, in turns. Special free dinners are provided for night-workers.

The employees of the Cleveland Twist Drill Co. are given a warm mid-day dinner at cost price, 5d., covering "dessert" (*i.e.*, pudding or fruit), in addition to the menu last quoted. The men are seated at long tables, in sections, to each of which is assigned one of their own number as waiter, who receives from each his

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written order the day before, on a card provided for that purpose. The monitors receive the food at the kitchen on large trays, so that the minute the men sit down at the table it is served to them. After meals they have recourse to tables filled with papers and magazines, while comfortable seats are at their service, as well as a piano, and they are allowed to continue smoking at the bench for the first half hour after work re-commences. The possible deficit on food is pretty well met by the sale in addition of cigars and tobacco. The Cleveland Telephone Co. also furnishes meals at cost in its dining-room. The Cleveland Varnish Co. provides an attractive lunch-room for the office employees. Of other Cleveland

DINING-ROOM OF THE SHERWIN-WILLIAMS COMPANY.

firms Messrs. Weideman & Co. furnish tea and coffee free in a pleasant dining-room, and Messrs. Eisenmann & Co. have a bright apartment fitted with heating apparatus for food brought from home. Here tea, coffee, and cocoa are served free ten months in the year. The Brown Hoisting Machinery Co. has at present only a hot 10d. lunch for the clerks, but contemplates cheaper provision for its 1,500 hands. Messrs. Benton, Myers & Co. have separate rooms for men and women, in which no item is priced above 2d. Although this does not meet the expenses, it is considered to pay because "the men do better work in less time, with more system, and it keeps the shop cleaner."[1]

Messrs. Heinz have admirable dining-rooms for men and girls. The former have the common-sense to pay their 5d. for a "square meal" of three courses, but the latter, though earning from 20s. to 30s. a week, of which 12s. 6d. to 16s. 8d. goes in board and lodging, prefer to save 4½d. daily for dress and expend only ½d. each for milk, tea, or coffee, bringing with them a "cold lunch" which may be warmed free, and, as in the Cleveland case quoted, has been provided from the boarding house. This usually consists of jam-sandwiches, fruit, fried eggs, or fish and cold remnants: pickles are furnished free by the firm. A lady writer of greater enthusiasm than acumen, who recently worked as an unskilled hand at bottle-washing in this factory for a few days—not long enough even to discover the thoughtful provision

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[1] This excellent record of Cleveland (Ohio) is due to the Industrial Betterment work of the local Chamber of Commerce.

made on every hand for the employees, gave this as an instance of the better treatment meted out to men who would combine to obtain what they wanted, quite unaware of the real reason, or of the efforts made by the firm to induce the girls to act more sensibly. The profits derived from the supply of the beverages in which these ill-advised young women indulge, known as the "coffee fund," eked out by contributions from the firm, are utilized to provide flowers for those of their number who are sick, or for their funerals, which are always attended by a representative of the firm and a few fellow-workers.

The Gorham Manufacturing Company of Providence, Rhode Island, availed itself of a move to the country after sixty years in town, to provide a "casino," built by the president, and equipped by the company, wherein is ample dining, library, and other accommodation. The dining hall, 59 ft. by 32 ft., reaching up into the roof, is furnished with thirty-five round tables seating six or seven, and the meals are charged three half-pence or some multiple thereof per portion, payable by tickets, the cost to the company being one-third more. Clerks working over-time receive a free *table d'hôte* dinner. The "casino" of the Westinghouse Electric and Manufacturing Company at East Pittsburg contains lunch rooms capable of "feeding twelve hundred persons per hour. The quick-lunch plan is in force; each has access to whatever he wishes from the supply maintained by the *chefs*. On his way to a seat he passes a clerk from whom he receives a check indicating the amount to be paid when leaving."

Converted into a lecture-room, two hundred and fifty can be seated in this apartment.

In the case of the Patton Paint Company, the present dining-room, with men and women in separate divisions, was the outcome of the action of the girls, who formerly co-operated in providing tea and coffee, which now the firm provides free, or substitutes on certain days a bowl of soup to supplement food brought from home. A lunch-club among the employees themselves provides also a very good meal for 4s. a week. The Solvay Process Co. provides a regular dinner for 7½d. to 180 daily, in addition to coffee and cakes at 6 a.m. for 2½d., and a 5d. lunch to 600, consisting of meat and potatoes, with one other vegetable, bread, butter, and one glass of milk or two cups of coffee. The American Locomotive Company contracts with a caterer to supply the workers at five of its works a liberal menu at a uniform charge of three half-pence per portion. This includes soup or vegetables and bread, any meat in season, sausages, sandwiches, pies, puddings, coffee with whipped cream, milk, lemonade, and chocolate, the prices being less than the average cost of the raw material. Only steaks are extra, 5d. for an ordinary size, or 7½d. for the huge American variety known there as "porterhouse," a clear cut across the limb.

The Deering Works have ample dining space fitted up on the top floor and in the basement, where the prices charged are: tea, coffee, or milk, 1d.; soup, 1½d.; "pie," 1d.; bacon and eggs, 2d.; meat, 2d.;—or a good square meal for 6d. to 7½d. Steam tables are provided for warming food brought from home.

The adjoining McCormick Works, now under the same control, have such provision as yet for the clerks only, but better arrangements are being made for all. The Bullock Manufacturing Co. has several lunch-rooms in which good meals are served under cost price, the charges varying in each to suit the different classes of employees. The managers consider that the opportunity thus afforded of getting together recoups their outlay on this department. At the Wanamaker Stores good meals are provided for 5d. The Chicago Telephone Co. provides a good free lunch (tea and coffee, with cold meat, fruit, etc.), changing the menu every day, and including fish on fast days for the Catholics.

MEN'S LUNCH ROOM, NATIONAL CASH REGISTER CO.

Messrs. Brown Bros. of Detroit set apart the first floor of their cigar works as a dining-room for 850 girls, who are served by a most expeditious and economical method. Tea, coffee or soup is supplied free, each girl taking her own cup or bowl to be filled at the counter, and helping herself to milk and sugar at a side table. Anything she wishes to purchase she takes from another counter, on leaving which an attendant indicates on her meal card by means of a punch the value of what she has taken. Or she may bring her food from home. The Plymouth Cordage Co. (1,200 employees) provides a dinner at 5d. or 6d., with cheap extras, the workers waiting on themselves in much the same manner. The Ludlow Manufacturing Associates have organized a restaurant across the road from their mill, where the charge for a meal of soup, meat, vegetables, and pudding is 7½d., or *à la carte* at corresponding prices. At first the diners waited on themselves, but afterwards attendants had to be provided. Yet only the better class seem to avail themselves of the opportunity, most of the men still preferring the old practice of eating a cold lunch in the shops. In this case one difficulty is that at the restaurant cash is required, whereas the local tradespeople give credit.

The U.S. Playing Card Co. of Cincinnati has recently erected a restaurant building to seat 1,230, run strictly at cost. Here the novel method is in force of posting the day's bill of fare in large letters outside the door, so that a selection can be made on the way in without stopping. To further minimise delay the employees leave work in four batches at intervals of ten minutes from 12 to 12.30, each taking a plate from a rack inside the door, and being served at a counter on the way to his or her allotted seat, by which means the whole number is served in 35 minutes. Free supper is provided for those on night work. The Weston Electrical Instrument Company offers a 10d. *table d'hôte*, consisting of soup, meat and vegetables, sweets, and tea or coffee, to which the workers help themselves from a counter. The sixteen south windows of the dining-hall are filled with boxes of flowering plants.

LUNCH TROLLEY AT THE ACME WHITE LEAD WORKS.

The Acme White Lead Works have not yet got to the length of providing dining-rooms, but furnish in each department folding tables and chairs which take but a few minutes to set in position, each table accommodating ten. A most commendable feature here is that an extra table is set for any employees of outside firms who chance to be engaged on the premises, that they, too, may enjoy a comfortable meal. At five minutes to twelve the whistle blows to stop work, that all may wash for lunch, and at noon a second whistle sounds for the tables to be set up. Cups and saucers having been distributed already by the janitor to every department, he now appears with a trolley full of two-gallon pots of coffee during winter or tea during summer, which is provided free by the firm. After lunch all remains are cleared away by the janitor, in order to leave the factory always tidy. The Laycock Bedstead Factory, of Indianapolis, utilizes a part of the basement as both dressing- and dining-rooms, according to the time of day. Sections are reserved for the clerks, the factory men, and the girls, four of the latter being told off each week in rotation to wait and clear up. All bring their own food.

At the Weinreich Cigar Factory, at Dayton, Ohio, hot soup is served to all women workers, who bring from home the remainder of their lunch, consisting of bread and butter, a piece of "pie" or "cake," pickles, and fruit,[1] "and the writer knows," writes a girl from a neighbouring factory, "that this is stale after standing from morning until noon, and is neither appetising nor wholesome; but how much better it will all taste with a good dish of soup or a cup of hot coffee! If nothing hot is provided, the girls will drink cold water after such meals; consequently indigestion, headache, and that awful tired feeling follow, and the work necessarily suffers." The Central Union Telegraph Co. of Dayton provides lunches at noon for the day workers, and at midnight for the night force. In winter there are hot meats, vegetables, and coffee, and in summer rolls and butter, fruit and coffee, all served at the company's expense. The dining-room is furnished with highly polished oak tables, and the table linen is white and of fine quality, laid with pretty dishes and good plate. Messrs. Lowe Bros., also of Dayton, have fitted up a dining-room in their paint works, the furniture including a piano, and supply hot tea and coffee free.

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[1] "Pie" in America means the semblance of one baked in a soup-plate and divided into portions for four; "cake" is what English housewives know as "jam-sandwich."

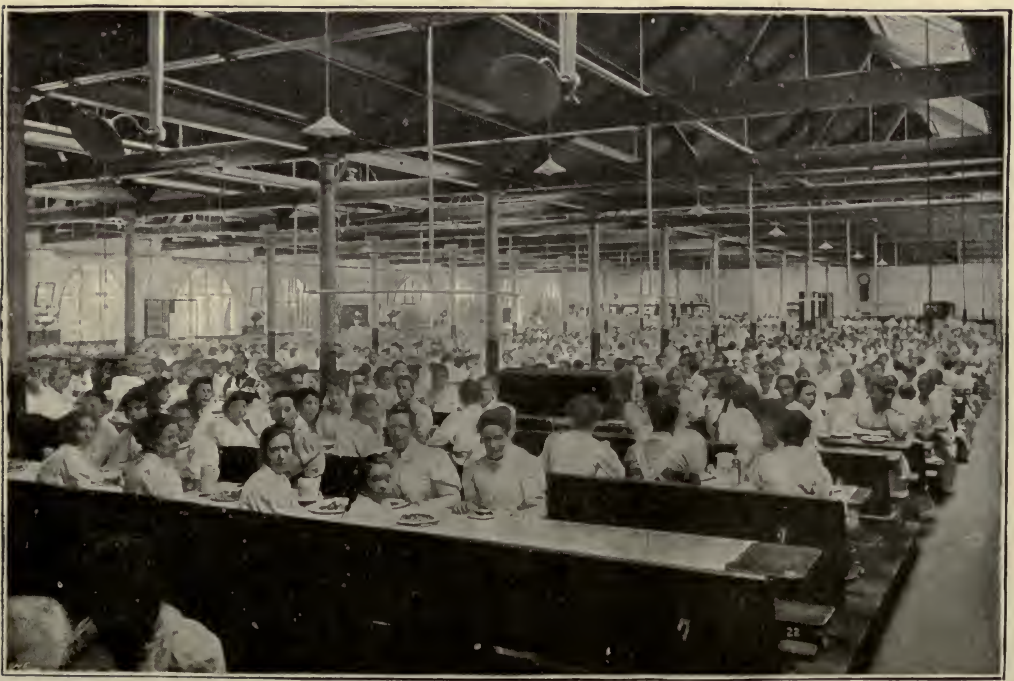
Other American firms setting a good example in this matter are: Messrs. Hochschild, Kohn & Co., of Baltimore, who serve a full dinner for 7½d., or "portions" at ½d., to 2½d.; the Simmonds Manfacturing Co., of Fitchburg, whose women lunch on the premises at 2s. 6d. a week, the men paying—and presumbly eating—double; the Eastman Kodak Co., of Rochester, N.Y., which also provides its women with lunch for 2s. 6d. a week (less than cost), but whose men chiefly bring their own food; and Messrs. Ferris Bros. of Newark, who serve tea free, and beef, ox-tail, mock-turtle, or chicken soup with biscuits at a penny!

The Burnham-Munger Manufacturing Co., of Kansas City, who maintain a café at the works; the Pope Manufacturing Co., of Hartford, who seat 1,000; Messrs. Packard and Sons, of Campello, Massachusetts; Messrs Woodward and Lathrop, of Washington; the Putnam Nail Co., of Boston; the Wisconsin Bridge and Iron Co, of Milwaukee; Messrs. Fels & Co., soap-makers of Philadelphia; the Purina Mills, of St. Louis; Messrs. Warner Bros., corset makers, of Bridgeport, Conn., might also be mentioned, and in New Jersey, the American Brake-Shoe Co., of Mahwah; the Arlington (perfumery) Co.; Messrs. Carter, Howe and Co., of Newark, jewellers; the Muddock Pottery Co., of Trenton; the Roessler and Haaslacher Chemical Co.; the Tide-Water Oil Co., of Bayonne; Messrs. J. H. Nichols, felt hat makers, of Nutley; and Mr. H. S. Peters, (overalls) of Dover. Similar provision is made in the Wanamaker and Siegel-Cooper Stores, at New York; and in most similar establishments, such as that of Messrs. Marshall Field & Co. and "The Fair" of Chicago. In these the same viands are served to employees as to restaurant customers, but in a simpler room with less service, at greatly reduced prices. At "The Fair" 400 sit down at a time at five successive meals between 11 and 2, costing but 1d. and 1½d. per portion, except tongue 2d., and ice-cream 2½d. a brick; coffee is 2½d. a quart, and "half milk, half cream," 1d. a pint. At meal times all the lifts of the establishment are reserved for five minutes to enable employees to get quickly to table.

In the United Kingdom.

The most extensive factory dining accommodation in the United Kingdom, seldom surpassed anywhere in size, and nowhere in provision, is at Bournville, where tables for 2,000 of Messrs. Cadburys' girls are in regular use in a fine hall. Food may be brought from home, and either cooked in the kitchen or heated in unique steam cupboards in the room ; or it may be purchased at wholesale prices at the counter. To provide the very best at the very least cost, wholesale buyers are employed by the firm, who make a special point of securing good fruit, which is on sale in the recreation grounds also. On Fridays employees may purchase this to take home in lots of not less than a shilling's worth—equal to much more than that sum would purchase elsewhere—and from the same store the nurses can draw supplies for the sick to supplement that specially grown for them. In the dining hall

STEAM FOOD-HEATING CUPBOARDS IN THE BOURNVILLE DINING-HALL.



GIRLS DINING AT MESSRS. CADBURYS' WORKS.

each article is allotted a special section of the counter, from which the girls help themselves in exchange for tickets varying in price from ½d. to 1s., which must be purchased beforehand, stating what is required, so that exact provision may be made, and waste prevented. On presentation the tickets are dropped into the slit of a box containing violet dye, which renders a second use impossible. The moderate prices may be judged from the following examples:

GIRLS' DINING-HALL AT PORT SUNLIGHT.

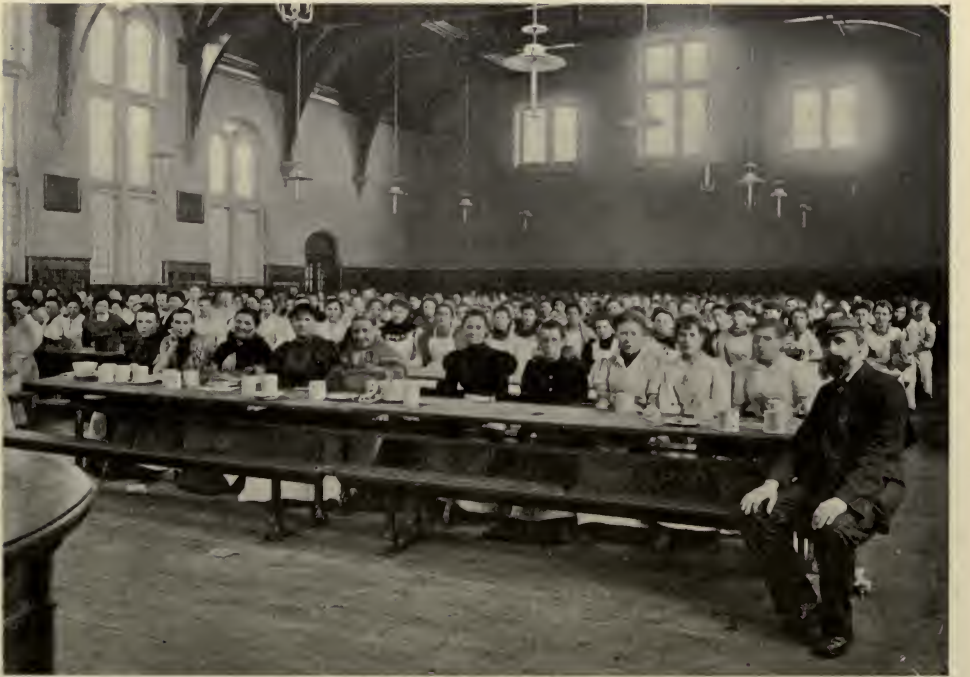
roast and two vegetables, 4d.; meat pies, 2d.; pork pie, 1½d.; soup and bread, 1d.; ham, 1d. and 2d.; eggs, sausages, bacon, pudding, pie, tarts, 1d.; tea, coffee, cocoa, milk, potatoes, bread, butter, cheese, jam, cake, or buns, ½d. Those told off to wait at the counter receive their meals free.

Second to this, in point of size, come Messrs. Lever Bros.' magnificent dining halls at Port Sunlight, each standing by itself in the village outside the works. In the finer of the two, erected at a cost of £18,000, there are seats for 1,500 girls, about half of which only are as a rule occupied. Here, again, there is the fullest liberty to bring food and have it warmed or cooked free, all necessary utensils being supplied; but the prices and the quality of the bill of fare prove too tempting to most, as well they may, to judge from the following specimens: meat and potatoes, or "hot-pot," 2d.; pudding, soup, tarts, etc., 1d.; tea, etc., ½d.

MESSRS. LEVER BROS.' MEN AT DINNER.

But the interesting feature is that this low tariff covers cost of material, cooking and attendance, the only expense to the firm being the interest on the capital invested in building and fittings. This, however, is in the present case considerable, or would be, but that it represents a portion of the share in the profits set aside for the benefit of the employees, on the excellent principle of "prosperity sharing" adopted by this particular firm, and well worthy of imitation. It is almost needless to add that the kitchen, the "outfit," and the style of the whole are all models of excellence. The men's dining-hall near by, though less pretentious, serves also in winter for concerts and entertainments. Here, on temporary benches and tables, the men, unlike the women—reversing the tendency in America—partake of food brought from home in cans, which is cooked or warmed for them free, hot water also being supplied. For the clerks' club separate dining tables are arranged. All working overtime are supplied with a free tea.

Another Liverpool firm that makes noble provision for the meals of its employees, as in many other ways, is that of Mr. W. P. Hartley, at Aintree. Here, too, the dining-hall is a handsome building, seating 600, of which any institution might be proud. The number employed in his jam factory varies from 500 to 1,500, according to season, so that when the rush of fruit is on relays have to be arranged. Credit tickets for meals are supplied if required, the value being deducted at the week-end—an arrangement for the special convenience of temporary workers without cash—or money is taken. The charges are: potato pie, "hot-pot," or sausage and "mashed," 2d.; soup, pudding, meat pie, fruit pie, 2 oz. of corned beef or cheese, mineral waters, fish from Grimsby on Fridays, 1d.; "chip" potatoes or milk, 1d. or ½d.; lemonade,

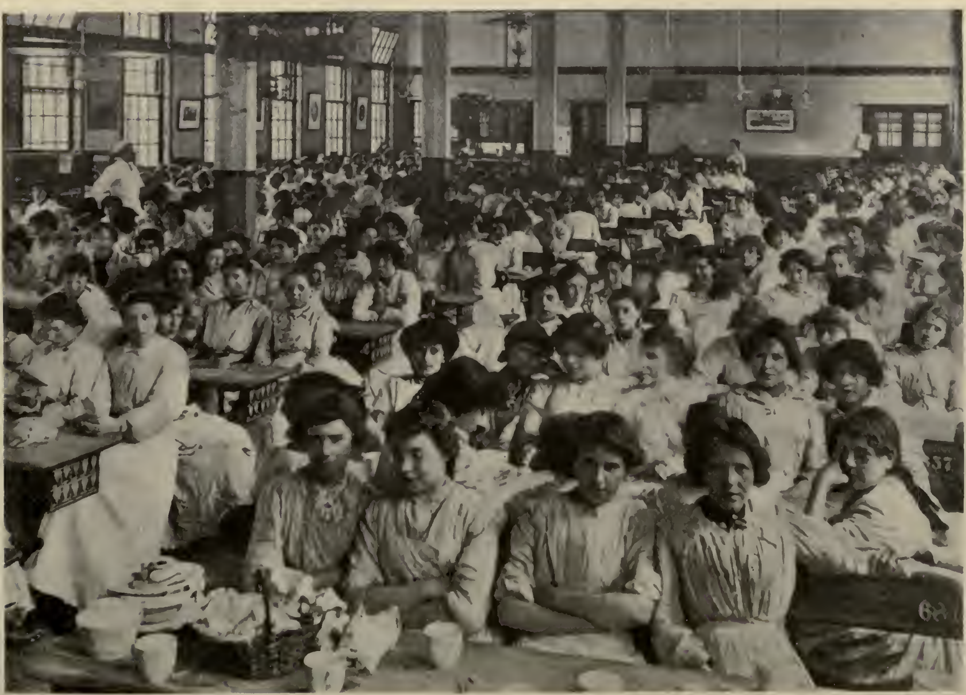


MR. HARTLEY'S DINING-HALL FOR HIS WOMEN.

tea, or bread-and-butter, ½d. "Enough fruit is eaten in the works." Food brought from home—principally here as elsewhere on Mondays—is heated free.

The mess-room, as it is called, at the Tangye Steel Works, in Birmingham, which seats a thousand, is managed on rather a different principle from that usually employed. The well-appointed kitchen and the catering are let out to a contractor, who charges a penny a week to each user of the room, for which he furnishes hot water or warms food if required, and supplies cooked food at the following tariff: Hot meat and two vegetables, 6d.; chop or steak to order, 4d.; bacon and eggs, 3d.; boiled ham or beef, per oz., 1d.; egg, pickle, pie, pudding, custard, tart, cake, etc., or ginger beer, 1d.; tea, coffee, or bun, ½d. No intoxicating liquors are allowed upon the premises (which, it "goes without saying," is the rule generally implied), but smoking is permitted in the latter half of the dinner hour, and newspapers are provided. Free dinners are supplied to some sixty of the leading clerks and managers in comfortable rooms attached to the offices.

The Rowntrees, of York, have two dining-rooms for their girls, seating respectively 750 and 500, and a third for their men, seating 500 (more of the latter living near or cycling home to dinner), besides separate rooms for "overlookers" and clerks. Men over eighteen have also the use of the smoking-room. Pictures, flowers, and hanging plants make the rooms bright, and the following tariff is in force: Vegetable or lentil soup, 1d.; Irish stew or pasty, 1d. or 2d.; sausage and potato, 1d.; meat pudding, 2d.; milk or



MESSRS. ROWNTREES' GIRLS AFTER THEIR MID-DAY MEAL.

Yorkshire pudding, 1d.; peas, etc., ½d. The usual provision for heating food is made, each employee having a dining-room number check to attach to the dish or bowl left, so that the attendants may put it at the right place in time for dinner, while the girls' tables are each provided with boiling water taps, and cups, etc., for tea.

Messrs. J. and J. Colman, the mustard makers, of Norwich, are among the pioneer English firms in this matter, though they have now been out-distanced in the elaboration of the principle by those already mentioned. Several simple dining-rooms, hung with pictures, are allotted to the various departments of the famous Carrow Works, which in many ways display the kind thought of the proprietors for their employees. An excellent kitchen is maintained, from which meals at 2d. to 4d. per dish can be either served in the rooms or sent out in double tins, the outer compartment of which is filled with hot water. A most ingenious form of menu is adopted, namely, a glass show-case hanging on the wall by the factory gate, that all may inspect it, wherein are displayed each day, as in a "cook-shop" window, priced specimens of the viands to be obtained. So practical an advertisement must decide many where to dine, especially as the prices run: four ounces of roast meat, dumpling, and vegetable, 4d.; slice of salt beef, fried fish, or stew with dumpling, 2d.; slice of cold beef, beef patty, pint of soup, puddings, etc., 1d.; half-pints of tea, coffee, or cocoa (served at 5.45 and 8.30 a.m., 1 and 6 p.m.), ½d.; short-cakes, ½d.; new milk (at 7.30 a.m., Sundays included), 1½d. a pint.

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All purchases have to be made by check, and hot meals must be ordered before 9 a.m. to ensure an adequate supply without waste. Each day there is a special *plat du iour*, so that variety may be combined with economy.

CARROW WORKS KITCHEN

"BILL OF FARE" AT MESSRS. COLMANS' WORKS.

Messrs. Joseph Crosfield and Sons, of Erasmic Soap fame, already provide a luncheon club for the directors and heads of departments, and are erecting dining-rooms to accommodate 500 men and boys and 200 girls out of a total of 2,000 (1,500 men, 250 boys, and 250 girls), each with baths, dressing-rooms, library, and reading-room. Mr. Graves, of Sheffield, has fitted the top floor of his new building with commodious recreation and dining-rooms, where meals can be obtained at cost price. Messrs. Sélincourt, of Pimlico, furnish daily, except Mondays—when 450 to 750 women and girls bring their own food to be warmed—meat and two vegetables (or one and a pudding) for 4d., followed by milk pudding at 1d. Tea is provided in the afternoon at 2d. a week, employees bringing their own food to eat with it. Messrs. Adams, of Nottingham, have a dining-room for the girls, all of whom now bring their own

EMPLOYEES AT MESSRS. BRUNNER, MOND AND CO. AT DINNER.

food, as the provision of dinners was not found successful. Messrs. Brunner, Mond & Co., who employ 3,000 men at their alkali works, provide a dining-room with food and water heating apparatus, but no food. Messrs. Fry, of Bristol, also provide dining-rooms with gas stoves, and in their new factory are including a large restaurant with kitchens. At Messrs. Huntley and Palmers,' three large dining-rooms accommodate about 1,500 at meal times. Messrs. Burroughs and Wellcome have a nicely furnished dining-room, and supply soup ($\frac{3}{4}$ pint and bread for $\frac{1}{2}$d.), tea, etc.; but propose to introduce 3d. meals, such as beef puddings, etc.

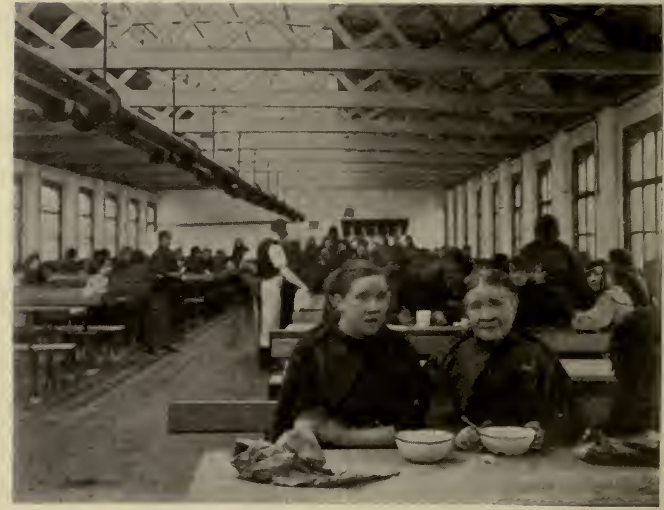
DINING-ROOM: MESSRS. BURROUGHS AND WELLCOME.

An ingenious device to meet the feelings of those who bring their dinners with them to a common table has been introduced at the North-Eastern Railway Works at Gateshead-on-Tyne. Two rooms, seating 1,100, are fitted with long deal tables nearly two feet wide, each with a division 10 in. high running down the centre, so that without rising or leaning over, no one can see what his *vis-à-vis* has brought, and all can go home with the contenting hallucination that their neighbours supposed them to fare better than they did. No food is here provided, but each man is furnished with a numbered tin can, the lid of which serves as a cup, and whatever he brings is cooked gratis, numbered rectangular tin dishes with lids being furnished for frying or baking, which is performed on a fine gas range. Of uncooked food the men bring principally steaks, chops, and sausages; fish sometimes, fruit never.

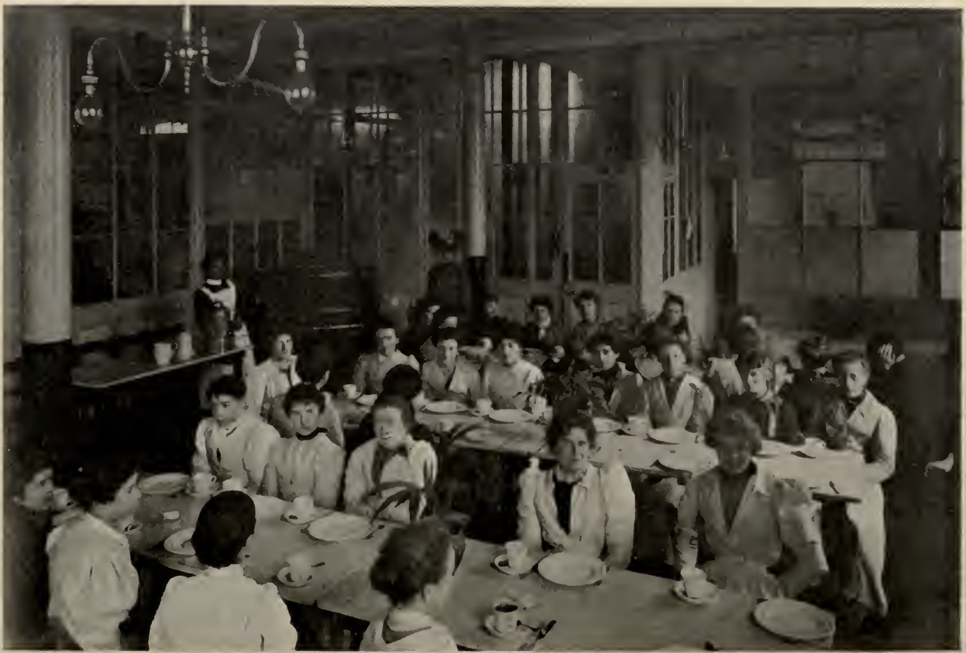
Similar arrangements are made in Newcastle by Messrs. J. H. Holmes & Co., employing about 450 men and 50 girls in their electrical works. Four rooms close to the works are set apart for men, and two on the premises for foremen and girls respectively. On account of the value of some of the materials used in the works, no workmen are permitted to remain on the premises at meal-times; nor are lunch baskets or cans allowed, they have to be left at the dining-rooms outside. The converted cottages put to this use represent a capital of £2,000, and an annual expenditure of about £250, on which no interest is charged. The chief trouble is to keep the place clean, in spite of scrap pans and the power of the men's committee to exclude any one who persists in throwing his remnants on the floor. A neighbouring firm, Messrs. R. and J. Wilson, whose somewhat unsavoury business is the curing of rabbit skins, have also provided modest dining accommodation for their workers, but these being of a low type, it is difficult to induce them to take advantage of it, though credit is given to the end of the week. Their 2d. dinners consist of meat stew with four or five potatoes, or meat soup and a lump of pudding.

The Diamond Match Co. furnishes free soup and tea or coffee at noon, in quarters fitted up in the basement, and charges 3d. for meat and two vegetables if desired in addition, or ½d. for pudding, bread, cheese, etc. Messrs. Pretty and Son have a commodious dining-room for the girls over the offices, where a cook is engaged preparing or warming food deposited with her in the morning, and where tea is supplied for ½d. Among other English firms making similar provision are Messrs. Clarke, Nickolls and Coombs, with a dining-hall at their "Clarnico" Sweet Works in Hackney, each girl in which may retain one of the 700 seats by paying 1d. a week; Messrs. Chivers, at Histon Jam Factory; Messrs. Huntley and Palmer, at Reading; Messrs. Hazell, Watson and Viney, and Messrs. Cassell & Co. in connection with their London printing establishments.

Irish examples of catering for factory hands are furnished by the Belfast Ropework Co., the Bessbrook Spinning Co., Messrs. Davidson & Co., of Belfast, and Messrs. Guinness and Jacob, of Dublin. In the first case an interest is added by the fact that the large dining-rooms and other provision for the welfare of the 3,000 workers, nearly half of whom are girls, are due to the efforts of the late Samuel Smiles, whose son was formerly managing director. The better conditions prevailing here secure a constant supply of workers at all times, and the choice of the best. Nothing is elaborate or fanciful, but everything is adequate and of excellent quality, and all is on a perfect business basis, the charges for food supplied covering cost, wages, rent of ground, and interest on capital invested in buildings and plant. When there is a surplus it is utilized to secure some improvement



DINNER AT THE BELFAST ROPE WORKS.



GIRLS AT MESSRS. PRETTY'S FACTORY AWAITING LUNCH.

either in quantity or variety. The tariff is as follows: Irish stew, potatoes and gravy, corned beef, fish, cheese, porridge and milk, rice and milk, or cocoa, 1d. per portion; milk or coffee, ½d. or 1d.; tea, broth, or pea-soup, ½d. Catering on these lines could meet with no objections from the most avaricious shareholder.

The dining-room at the Bessbrook Mills was given by Mrs. J. M. Richardson, wife of one of the former owners, who, before the business passed into the hands of a public company, spared no pains to promote the welfare of their people. Under the new régime, however, almost all this has been dropped save the dining-room, which is self-supporting. The Irish standard of living being very low, as it must be when the mill-girls, or "doffers," earn but 7s. or 8s. a week, as they do here; and the regulation home diet being potatoes, the bill of fare is not ambitious, so the average weekly cost of eating at the works is only 11d. per head. The prices are: Six potatoes, ½d.; buns, ½d. and 1d.; four slices, or one-third of a loaf of bread, 1d.; butter or jam, ½d.; meat broth and rice, ½d. and 1d.; tea, ½d. "Half-timers" in the spinning-room get their meals free, but they are a miserable, shoeless lot, and those who work the full fifty-five hours look little better.

Messrs. Davidson & Co., makers of the Sirocco tea-drying apparatus, have established a comfortable dining-room for their 250 to 300 employees, where each customer has a numbered square at table, on which he finds at meal-times the dishes ordered beforehand—the day before in case of breakfast—

and paid for by checks. The bare cost of the food, exclusive of labour, fuel, etc., is covered by such charges as 3d. for Irish stew, roast meat or three sausages; 1½d. for stewed apples, puddings, or eggs; and 1d. for potatoes or broth.

Although the conditions of life in Dublin render it possible for the majority of workers to take their meals at home, Messrs. Arthur Guinness, Son and Co., Ltd. provide a large dining-room, at which a staff of cooks and attendants are maintained at their expense, the cost price of food alone being charged. Workmen on special tasks receive free meals. Draymen starting early for distant deliveries get substantial breakfasts free, and those starting at 6 a.m., including the women cleaners, are supplied with roll and tea or coffee free. All messenger boys and boy labourers receive a good meat dinner free.

Messrs. Jacob provide one large room for 700 girls, and smaller ones for foremen, clerks, etc., meeting the expenses of the large one by charging for tea, coffee, cocoa, soup, milk, or lemon-squash, ½d. per half pint; three ounces of meat with vegetables, 2d.; two cuts of bread and butter, or jam, or a saucer of peas, ½d.; rice, blancmange, or stewed fruits, 1d. This room is filled three times in succession, while the men and boys are served at the same time from a counter. The large room is furnished with a musical-box.

Messrs. James Templeton & Co., carpet weavers, of Glasgow Green, have excellent dining accommodation a few minutes' walk from either of their mills, in the building secured as an Institute for their workpeople. This is maintained from a special fund, but the prices charged provide materials and wages. The girls obtain roast meat and potatoes for 4d.; stewed or minced meat and potatoes for 2d.; soup and bread, puddings, apple-dumplings, etc., for 1d.; tea, bread and butter or jam, for ½d. The clerks and others dine apart, and are charged: roast, boiled, stewed, or fried meat and potatoes, 6d.; soups, 1½d.; puddings, etc., 2d.; a special menu being arranged each day for both classes. Messrs. J. and P. Coats, Ltd., of Paisley, have a dining hall accommodating 500, with lavatory and sanitary arrangements of the most modern description. Heating apparatus is available for those who bring their own meals, or for 2d. they may obtain, according to the day of the week, mince, pea soup, broth, or fish and potatoes, or potato soup and pudding with bread; half price being charged to half-timers. At breakfast porridge and milk are supplied at 1d. or ½d., and tea with bread and butter 1d. to all. Payments are made by ticket. The Scottish Co-operative Wholesale Association also makes provision for meals at its Shieldhall Works.

Lessons from Failure.

In all these examples the degree of success obtained with the dining arrangements depends to a great extent on the attractiveness of its surroundings. Those firms which, aware of the ordinary habits of their workers, provide no better, or little better, accommodation than their homes do, and much less than the public-house does, are usually disappointed at the result, and several such could be named. "Our workers are of such a low type, you know—so ignorant," etc., etc.

Accommodation of this class is often supposed to suffice which would turn most of the readers of these pages sick if asked to take a meal there. So-called dining-rooms are to be found which are seldom so used, and those responsible are disheartened. Success is only attainable when distinct attractions are offered, apart from merely cheap food and warming facilities. The cleanliness at least of the rooms and the utensils must be above that to which the customers are accustomed, and there should be abundance of light, but especially of air. Neatness and order must prevail, and good behaviour be made a condition of attendance. If really good food, well cooked, is then served at prices within the reach of the workers, or their own food heated free, the dining-rooms can hardly fail to succeed.

The only case of absolute failure in the provision of dining accommodation or meals which has come within the writer's experience—since the Cleveland Hardware system was not of itself a failure—is that of Messrs. Pratt, Letchworth & Co., at their Malleable Iron Works, at Buffalo. Thirty years ago numerous schemes were set on foot for the benefit of the employees, and for a time met with great success. These included dining-rooms and a library to which the subscription was but ½d. per week, the only prohibitions being against swearing and the use of intoxicants ; but after a while both dropped through disuse. Six or seven years ago a fresh start was made, with improved reading and recreation room and monthly entertainments, but again in time the interest flagged. Once turkeys were distributed at

Christmas and Thanksgiving—a frequent practice with American houses,—but as the men were led to believe that it would all come out of their wages in some way, that, too, was discontinued. The next experiment was a soup kitchen, whereat meals were served at cost, and which at first attracted several hundred daily; then the row of "saloons" confronting the gates, which has been the cause of most of the trouble, retorted with similar meals, to say nothing of the so-called "free lunches," till the attendance fell to fifty or sixty, and the dining-room was run at a loss, so had to be "shut down" like its predecessors. Otherwise the general explanation accepted by the firm is that now the men get too much money and too much free time, so that instead of having to economize they waste both in drink, food and luxury, rather than save money to buy their homes.

Formerly free excursions were arranged every autumn, which included wife and family, bachelors being invited to bring each a lady friend, but the principals who accompanied the expeditions began to discover that a large proportion of their guests were strangers, the tickets having been given or sold to others; so that also had to be abandoned. At another time an adjacent field was rented, and games were organized for the dinner-hour, which was lengthened for the purpose, but after an enthusiastic spell even this had to be dropped for lack of interest. The present head of the firm, who was not responsible for the earlier ventures, agreed when it was suggested that perhaps these successive failures were in part due to their having been organized entirely by the firm, instead of throwing the responsibility on the shoulders of those intended to benefit therefrom, as is now done as far as possible by most progressive firms ; but he pointed out that the majority of their employees were Poles or Germans, and not natives of the country, which doubtless helped to complicate matters. But a firm so determinedly generous and thoughtful deserves hearty recognition for its commendable efforts, whatever the outcome.

VI. RECREATION

SECOND only to the importance of good food and air for building up the worker's system, come those other recreative processes which are more generally classed as "recreation." Play is as important as work when occupying its right place, and of the right description. It is even possible that recreation may be combined with work, or at least that the circumstances of work may be so arranged that it becomes pleasant instead of irksome when not pushed to excess. This, after all, is what the wise employer strives after, for it is only where high spirits and enthusiasm enter the human machine that, like a well-oiled engine, all the parts work smoothly and produce the greatest effect with the least friction.

Importance.

No pains are therefore wasted in making the lives of the workers joyous and bright, whether during work-hours or not, and in proportion as the task is dull and unvarying, it is essential to afford compensating relief, both at the time and after. The forms of recreation possible may be classed as those available (*a*) during work, (*b*) during intervals of work, (*c*) during meal-hours, (*d*) after work is done, and (*e*) on holidays. All need attention, although in certain forms of employment some present more difficulties than others. The importance, in this connection, of the eight-hour day, gradually being adopted by most of the progressive concerns alluded to, cannot be overlooked, as only by its introduction can proper leisure be secured, either for recuperative recreation, or intellectual development. An existence entirely devoted to toil, food, and a minimum of rest is not life, it is slavery, whether the impelling lash be pride or hunger, and only the poorest return can thereby be secured.

During Work.

First, then, what is possible during work-hours? To begin with, the cheerful surroundings which have been urged and instanced have a most important recreative effect. The machine-tender who is able to raise his or her eyes from the whirring monster which requires such slavish attention to the peaceful beauties of nature, drinks in life and strength from the view. The folder or stitcher who ceaselessly performs uninteresting movements is refreshed and strengthened by having attention called between whiles to the beautiful and instructive pictures which have been placed on the walls, and will only remain where they are for a month, in order not to grow stale and lose their effect.

Music.

But even when these forms of recreation are absent, it is possible to utilize others. It has been shown that a ship is much more quickly coaled by human labour if the band plays the while, and the marching capabilities of troops encouraged by music are known to all. Why, then, should not music be more general in factories than it

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is? Here, again, no theory is advocated, but the extension of a practice already tried with success. Years ago the writer learned from experience how much more quickly he could get newspapers folded by Spanish lads while they were singing hymns, and more recently he found a piano in use by the American Cigar Co. in their factory at Greensboro', North Carolina, which was played daily from 9 to 10 and 3 to 4, while nimble fingers rolled the leaves to adagio time; sometimes it is one of the "lady stenographers," who sings as well as plays. The system has worked so well that it has been

VIEW FROM A NATIONAL CASH REGISTER WORK-BENCH.

adopted by this Company in its other factories also. He has also watched the Burmese dragging logs to an anthem, and has listened to the chorus of Japanese rammers tunefully pounding concrete, or carters pushing uphill a load of stone, and has wondered why no greater use was made in his own land of this powerful incentive to exertion, fully appreciated, however, by sailors. Of English firms who have adopted it may be mentioned Messrs. Joseph Crosfield and Sons, who have trained the girls in certain departments to sing part songs, which they are encouraged to do at certain hours while they work. The same custom obtains in the chemical works of Messrs. Henkel & Co., of Düsseldorf, popular and national songs learned in school being chiefly sung, the elder girls leading, and the young soon falling in.

WRAPPING ERASMIC SOAP AND SCENT TO MUSIC.

Messrs. Henkel impress upon the manageress the importance of singing being kept up, because "it prevents them from talking, and leads to other ideas, (the girls) thus sticking to the work, and more is done than without singing. Numbers of firms are creating amongst their workpeople singing clubs with one lesson at least in the week, thus bringing individuals more together, having made friends in the club." In many occupations singing would of course be impracticable, but these are just the forms of employment which require it least, because depending on the exercise of individual thought demanding abstraction: it is possible in proportion as the work becomes mechanical, and calls less for individuality.

During Intervals.

During the short intervals of relaxation from work which have been advocated, nothing is so important as a complete change of scene and action, in the open air by preference. Where factory grounds exist this is one of their most valuable uses. A briskly-played game, a run, or even a seat out of doors with a book for ten or fifteen minutes will work wonders from a recreative point of view, but when this is impossible physical drill, with all windows open, is an excellent substitute. This is regularly provided by the "N. C. R." Co. where feasible, the young women of certain departments exercising under a trained instructress as they stand by their chairs, and the "office force" repairing to the gymnasium for a like purpose. Regular playgrounds, with outdoor gymnastic apparatus, probably furnish the means of compassing the greatest amount of physical exercise and "change of air" in the shortest time, and these are sometimes provided, as by Messrs. Boden, of Derby, for their girls.

During Meal Hours.

The dinner-hour affords more scope for recreation, though with many the preference is for its mental rather than its physical forms, much depending on the nature of the occupation. The provision of reading matter, often in specially fitted apartments, has been alluded to in dealing with factory and other dining-rooms, or will be more fully dealt with under the head of education, so need not now be considered. Other possibilities, however, still call for mention. Music, as has been mentioned, is sometimes provided during

YOUNG WOMEN'S PHYSICAL CULTURE CLASS: LONDON DEPÔT OF NATIONAL CASH REGISTER COMPANY.

NATIONAL CASH REGISTER MEN EXERCISING.

meals, as at the Hungarian State Iron Works and by Messrs. Cadbury Bros. with their fine organs; at the Krupp Works with its orchestrion; at Messrs. Brown Bros.' Cigar Works at Detroit, where a hired pianist sometimes discourses music at the firm's expense; at the Heinz Pickle Factory, by the Natural Food Co., the Deering Co., and others content with pianos in the dining-rooms. In the last-named instance, the floor of the basement

DINING-ROOM USED FOR DANCING; DEERING TWINE WORKS.

dining-room being suitable, and the pillars thoughtfully padded, with the assistance of a piano-grinding machine the "light fantastic toe" is often active during the noon-hour. So also in the clerks' dining-room at the Cleveland Hardware Works. Pianos in the workshops themselves, available after meals, are to be found in the Cleveland Twist Drill Factory, where the employees subscribed to purchase the instrument, that they might enjoy it without occasion to waste brains or money in a public-house ; and in the Acme White Lead Works, where the use of floor space is avoided by placing the instrument on top of a case with standing room beside it for two persons in addition to the seated player. The dining-table seats at the Augsburg Carding and Spinning Mills have been specially constructed to facilitate a comfortable after-dinner nap!

PIANO IN THE SHERWIN-WILLIAMS FACTORY.

Dancing is a favourite amusement after lunch—which is seldom a heavy meal—either in the dining-room itself, as at the Natural Food "conservatory," the Deering Works already alluded to, or in the recreation-room, as at Messrs. Ferris Bros. The National Cash Register Co. goes so far to encourage dancing as to organize classes, and allow those qualified to hold receptions in the factory two evenings a week. To this reference has already been made. Dances are arranged each Friday in the gymnasium "assembly-room" at Messrs. Crosfield's, which is utilized during the noon-hour for practising part songs. This firm and many more develop the latent talents of the workers, and promote good fellowship by encouraging bands and musical societies, though few, like the Acme White Lead Co. and Messrs. Rowntree, arrange for amateur "sing-songs" during the noon-hour. Lectures are, however, sometimes arranged, as at Messrs. Tangye's, but it is questionable whether for most indoor workers something more distinctively recreative would not be preferable.

DANCING CLASS IN THE NATIONAL CASH REGISTER FACTORY.

Those who can get out of doors when the weather permits are always the most fortunate, and foremost among them must be classed the white-robed throng

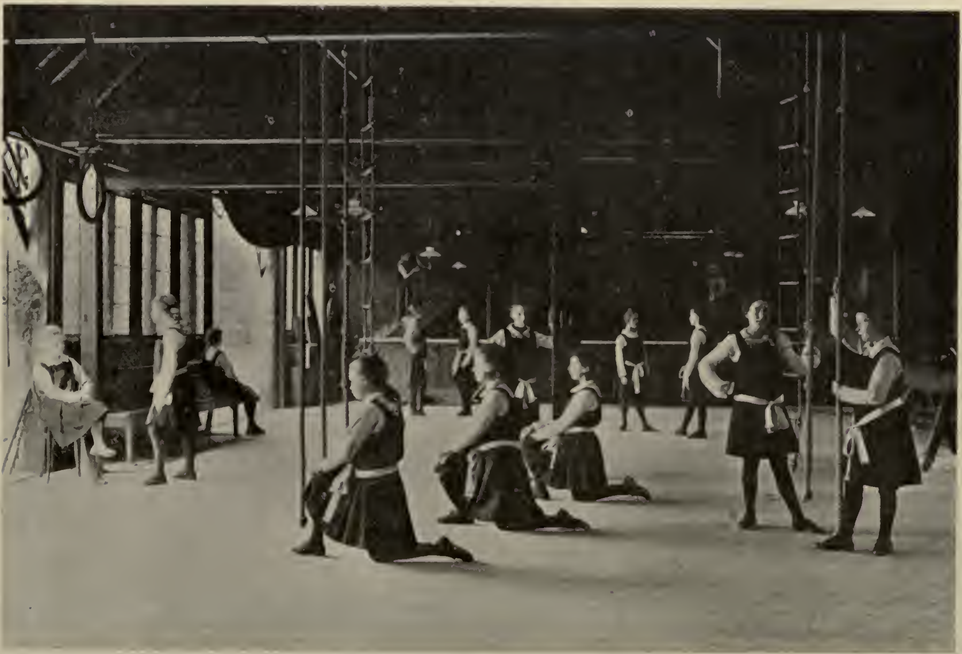
HOW THE NOON HOUR IS SPENT IN SUMMER BY THE GIRLS AT BOURNVILLE.

LIBRARY OF THE UNIVERSITY OF CALIFORNIA

"SING-SONG" AFTER DINNER AT MESSRS. ROWNTREES'.

that pours out of the Cadbury Works, passing beneath the road by a private tunnel into the twelve acres of well-laid-out private grounds reserved for their use, with lawns and walks and tennis courts, all that could be desired. Disposed on the grass or among the trees as fancy dictates, it is most difficult to connect the enchanting scene they present with factory life, all preconceived ideas of which seem far enough removed. Here, when the day's work is done, there is every inducement to physical recreation. Not only are adequate playgrounds and cricket-pitches prepared for their use, but for wet weather there are a large covered ground and a spacious gymnasium fitted with the

After Work.



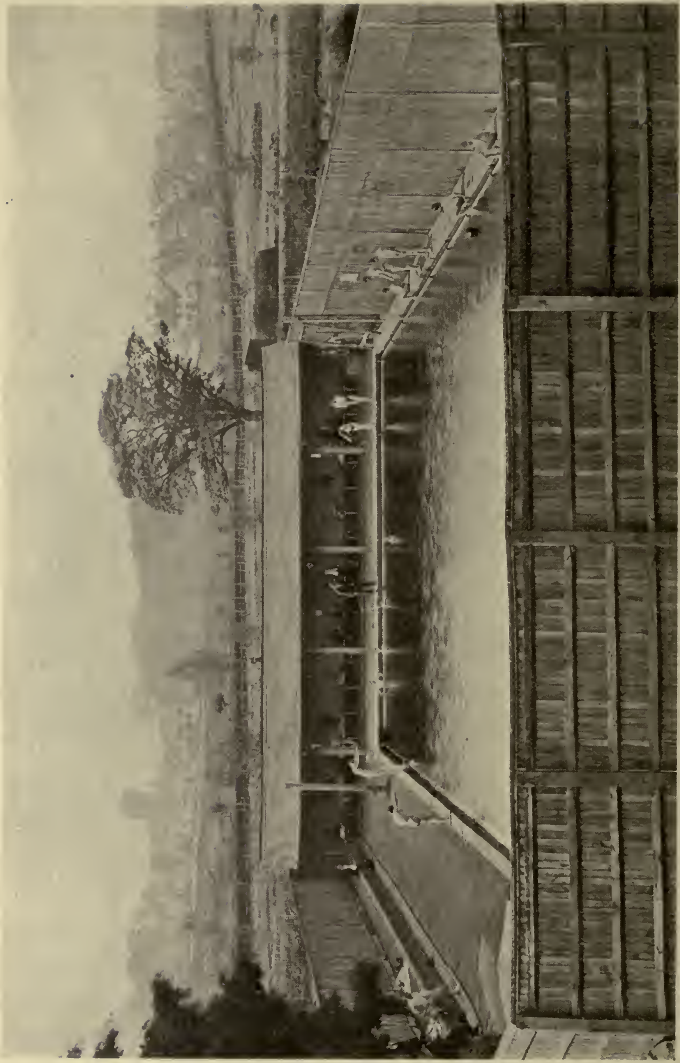
COMPULSORY PHYSICAL CULTURE OF MESSRS. CADBURYS' GIRLS IN THEIR OWN GYMNASIUM.

most up-to-date apparatus. Two special instructresses give their whole time to the important work of training the girls in gymnastics and swimming, and all under fifteen are obliged, unless prohibited by the doctor, to attend two gymnastic classes a week during work hours. A committee of the girls entirely controls their athletic club, which organizes cricket, tennis, basket-ball, and other games. Adjoining the factory a magnificent swimming bath has been erected for the girls, and everything that could be done for their physical culture seems to have been remembered. The swimming bath covers 81 feet by 45 feet, and is fitted with eighty-seven dressing rooms, a gangway 3 feet wide, for the use of visitors, running all round. A low pressure hot water apparatus maintains a comfortable temperature, while ample ventilation is secured the whole length of the side windows, and by the lantern roof of open hammer beams. For use before a swim, there are twenty-four spray and shower baths, half-a-dozen tubs with showers, and a vapour bath, all supplied with hot and cold water, and most admirably fitted.

For the men's use Messrs. Cadbury have set apart several acres of level ground beside the works, overlooked on one side by a handsome pavilion most elaborately fitted, and including a fully-equipped gymnasium 60 ft. long, as well as kitchen, refreshment bar, dressing-rooms, and shower-baths. This was the firm's Coronation gift to its employees. Across a well-kept cricket and football field, accommodating three matches on most Saturday afternoons, is a fishing pool formed by the Bourn stream, part of which is fenced off as a swimming pond for the men, 100 ft. by 45 ft., where in summer all boys under sixteen must learn to swim, during time paid for, in winter attending gymnastic classes.

ATHLETIC PAVILION PROVIDED BY MESSRS. CADBURY BROS. FOR THEIR MEN.

Another fine recreation pavilion has been erected by Messrs. Brunner, Mond & Co., at Northwich, on the athletic ground which used to be the paddock of the country seat beside which the works stand. This, however, serves for more than athletics, as it contains



MEN'S SWIMMING BATH BESIDE THE BOURNVILLE WORKS.

concert halls, billiard-room with four tables, baths, and a reading-room with well-used library. Messrs. Burroughs and Wellcome have utilized a local mansion and its extensive grounds, practically a park, together with an adjacent erstwhile flour mill, at Dartford, as a club for the mental and physical recreation of their 750 employees, two-thirds of them girls. Not only are mansion and grounds furnished and maintained in first-class style, but the mill has been as cosily fitted as any one would desire—bath-rooms and photographic dark room included—and a fine gymnasium with a dancing floor has been built close by. A river through the grounds provides

ATHLETIC PAVILION AT MESSRS. BRUNNER, MOND & CO'S. WORKS.

boating and swimming, and sometimes skating. All these privileges may be enjoyed on a contribution of 5s. a year from seniors, or 2s. a year from juniors, including men's and women's athletic clubs.

At Port Sunlight Messrs. Lever have allotted for recreation an acre and a half adjoining the men's club, where bowls, quoits, etc., may be indulged in, as well as less healthful indoor games. Messrs. Colman have reserved a block of buildings for the recreation of their girls, overlooking a large asphalte-paved playground with swings, etc. Just outside the works they have also provided, in connection with the schools which they built, a playground for boys, partly covered in, fitted with first-rate gymnastic appliances; but this has now been handed over to the Educational Authorities. Messrs. Boden provide a good billiard- and reading-room with free lighting for their men, who subscribe 6d. a month as to an ordinary club which they manage entirely themselves,

SOCIAL CLUB AT PORT SUNLIGHT.

and buy their own beer. Messrs. J. and P. Coats provide a recreation room, with billiards, etc., and a liberal supply of papers, the only charge made being for billiards. Out of doors they have a cricket ground and two bowling greens in charge of a professional cricketer and staff of groundsmen, towards the upkeep of which members of clubs pay a small subscription. There is also a cricket pavilion, thrown open in winter for reading and recreation, and each of the four gate-houses has a smoking room attached, for meal hours. For girls without homes of their own, there is a comfortable home in charge of a matron, with library, reading and recreation rooms open free to all female-workers. There is a spacious hall wherein periodical concerts and dances are organized, and dressmaking classes are arranged.

In London most of the leading wholesale and retail establishments have their playing-fields out in the suburbs, and many are members of the West End Athletic Association, the Wholesale Druggists' Association and kindred societies. Some have also gymnasia, or secure special terms for their employees at neighbouring halls and baths. In Germany the gymnasium almost always exists in connection with the factory or other large centre of employment, some firms, as the Schlierbach Pottery, making practice therein compulsory, so that a long list of examples would only be tedious. Messrs. Marshall Field & Co., of Chicago, have gymnasia for men and women, with shower-baths, reading- and rest-rooms in their huge department store, one floor of which is entirely devoted to the welfare of their 7,000 employees. The Elgin Watch Co., of Elgin, Illinois, has also fitted up a fine gymnasium.

Messrs. Huntley and Palmer have provided fourteen acres for the use of their employees after hours, of which some 3,000 members out of 5,000 hands avail themselves. Messrs. Hazell, Watson and Viney have set apart six acres as a recreation ground at Aylesbury, and they have swimming classes for girls, as also have Messrs. Rowntree. In Germany Herr Brandts has playgrounds for the children too. The Hungarian State Iron Works provide, at Diós Györ, a summer swimming establishment with basins for men and women, tennis lawns, and a skating pond. The American Playing Card Co. utilizes a large reservoir originally intended for use in case of fire,

A SHADY NOOK FOR THE DINNER HOUR AT MESSRS. COLMANS.

for swimming or skating, according to season. The United Co-operative Baking Society, of Glasgow, secures free access for its boys to the Corporation baths close by, once a week. Messrs. Crosfield teach all their boys of fifteen to swim in the Warrington Corporation baths, two squads going weekly in charge of an instructor from the works. The cost and loss of time is borne by the firm, which also offers prizes. The Plymouth Cordage Company, situated on the sea front, has, in addition to large baths for both sexes, fitted up dressing quarters above the beach, supplying suits or towels at ½d. a time.

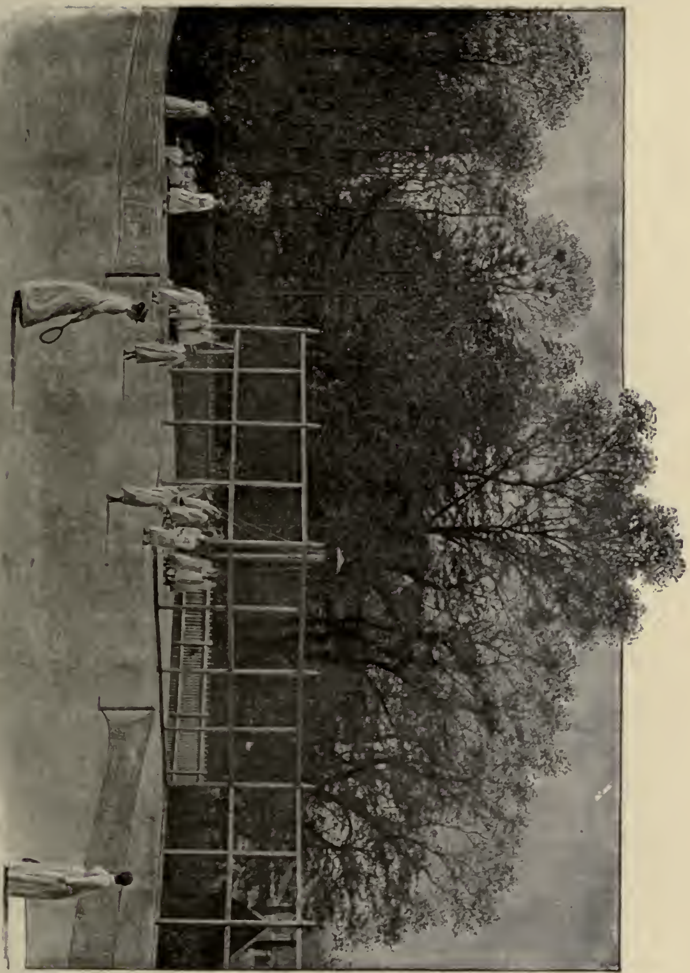
Works Institutes.

The handsome pile which Mr. Carnegie has erected for the Homestead workpeople at Pittsburg, contains not only a public library and concert-hall with organ, but also a fine swimming bath, a gymnasium, and bowling alleys. Any one may avail themselves of all these by paying 8s. 4d. a quarter, employees of the works being asked for only 6s. 3d., women 4s. 2d., and boys and girls 2s. 1d. a quarter. In proportion to the wages received, these fees would be low for any one department of this Institute. Like provision has been made at the Braddock Duquesne Works of the same corporation.

The pioneer in this class of building is probably the Athenæum of the Illinois Steel Works at Joliet (built in 1889), which is fitted in very much the same way with library and reading-rooms, a hall to seat 1,000, gymnasium, play-courts, swimming and other baths, bowling alleys and billiard-rooms, with outside accommodation for tennis and croquet. The inclusive subscription is but 8s. 4d. a year, wives and adult daughters having the use of the library and evening classes for 1s. each per annum, and sons from nine to sixteen enjoying the bath for the summer at the same nominal charge.

The Warner Brothers Co. have erected beside their corset works, at a cost of £20,000, a handsome building known as the "Seaside Institute," so named after the neighbouring park. In the basement are dining-rooms, open to the public; on the ground floor sitting-rooms, reading-rooms, library, and six free baths; on the first floor a lecture and entertainment hall and club-rooms, a few of which are used by the men's fire brigade. Most of the firm's employees being women (about 1,000), the remainder is devoted to them, and the whole is under the care of a competent matron. The librarian conducts literature classes, and other subjects are taught when desired, but the social rather than the educational features of the place are chiefly patronised, and it is only open on certain nights of the week, though on all working days. The whole thing grew out of a decision to meet the need for proper dining accommodation and catering.

The Celluoid Co. of Newark, New Jersey, has built a club-house for its 1,300 employees at a cost of £8,000. Its three floors, 50 feet by 100 feet, comprise slate bowling alleys, rifle-tunnels and shuffle-boards in the basement; billiards and café on the ground floor; library, reading and reception rooms, and baths on the first floor; entertainment



RECREATION GROUND FOR MESSRS. CADBURYS' GIRLS.

15

hall, used also as gymnasium, on the second floor. Taxes and insurances are borne by the firm, but otherwise expenses are met by a managing committee of the 515 members who contribute a shilling a month. In the Novelty Wood Works of the same town, the top floor of the factory is fitted with gymnasium, baths, etc. The Weston Company has furnished a recreation hall, club-rooms, and a marble and mosaic swimming bath, 160 feet by 35 feet, the use of which has to be preceded by that of the douche, and may be enjoyed in the firm's time. Messrs. Howland, Croft & Co., worsted makers, of

CLUB HOUSE FOR THE KRUPP EMPLOYEES AT ESSEN

Camden, N.J. (565 employees), also have recreation, reading, and bath-rooms.

In Germany Messrs. Krupp have built a magnificent club-house for their superior employees at Essen, standing in its own grounds, where works and city meet, which contains concert and lecture halls, recreation- and reading-rooms, restaurant, and all the best equipment. Messrs. Peters have erected a fine "welfare institute" at Neviges, also standing in its own grounds, with large and small halls, class-rooms, and kitchen. Among French manufacturers, Messrs. Harmel Bros. have erected and fitted fine recreation- and reading-rooms for their mill hands.

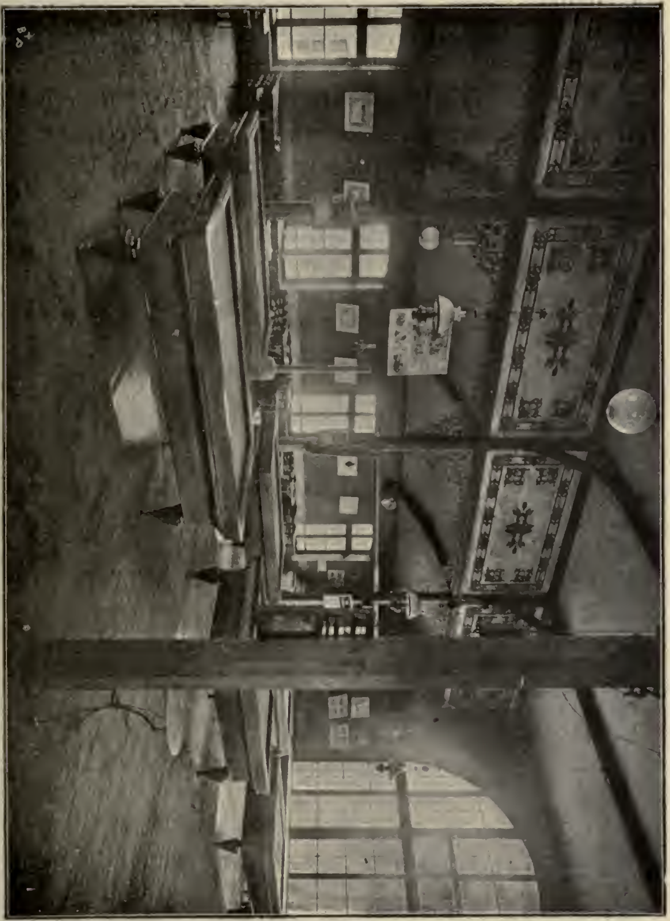
In our own land the Garswood Hall Colliery, near Wigan, has to its credit a well-equipped institute, surrounded by a remarkably good bowling green and a cricket ground, containing a hall seating 400, billiard-rooms for men and boys, a library of 1,400 books, and club-rooms. The place having been provided free, it is managed entirely by the men's committee, and maintained by a levy of 1d. a week from some 2,500 men and women workers. During the winter a high-class course of lectures is arranged, with dances at Christmas. Some fine pictures hang in the hall, and periodical loan exhibitions are organized under the guidance of the managing director. It is open for the use of all local residents.

Mr. Hartley has been as liberal in erecting and throwing open to the public a splendid institute at Aintree, handed over to a trust and managed by its own council representing 300 members paying

8s. a year. Its use is free to clubs, to keep them out of public-houses, and a roomy restaurant with a like object does much good without profit. Outside is an ample bowling green with pavilion. Messrs. Rowntree maintain an institute in York, their works being at some distance, for meetings, classes, games, and gymnasium. Messrs. Tate provide a fine institute for the men of their Silvertown factory in the East of London.

BASE-BALL ON THE "N.C.R." SPORTS FIELD.

Two more modest home examples of such institutes are furnished in connection with Messrs. Templeton's Works, in Glasgow, and the Bessbrook Mills, in Ireland. In the former case an erstwhile theatre close by is placed at the disposal of the workers, together with the shops below, which are furnished as dining-, reading- and club-rooms. The large hall may be had free on the application of a hundred or more workers, and the small hall on that of twenty or more. A sum of £2,000, contributed by the original partners, is invested to provide for recreative purposes, and the same sum



MEN'S RECREATION-ROOM AT MESSRS. HARMEL'S VAL-DES-BOIS MILL.

for beneficent purposes, the disbursements being controlled by a committee of employees. The Bessbrook Institute is a relic of Messrs. Richardson's social work, and contains a good lecture hall, now only occasionally used, a library, reading- and recreation-rooms, available for an annual subscription of 5s. (or 3s. to apprentices). The spinners, however, being mostly Roman Catholics, are not permitted by the priests to make use of it. There is also a recreation field, now not much used.

Tramway Employees.

Another class of employees' recreation-rooms for workers is provided by far-seeing tramway companies at their termini or stables, instead of leaving the men the prey of public-houses. Instances of this are afforded by the Cuyahoga Co., the New York and Chicago City Railways, the Cincinnati Traction Co., the Cleveland Tramway Co., and the Brooklyn Rapid Transit Co. The rooms are generally fitted up for dining, reading, billiards, and other games, such as bowls, sometimes including also a gymnasium. At one depôt of the last-named Company the men have built a stage whereon entertainments are organized on behalf of their athletic clubs. Ten-gallon tanks of good hot coffee are provided free by the Company in cold weather, that the men may "warm up" while on the road. In the heaviest summer days, too, coffee and ham-sandwiches are furnished gratis at the principal pleasure resort terminals. Lavatory, if not bathing, accommodation is often provided at these rests, which are generally supported by a small contribution from the men, the Companies providing the fitted-up quarters, which serve all the purposes of clubs. These and kindred arrangements never fail to attract and retain a higher grade of employees, ensuring safe and efficient service. Prizes are sometimes offered for clear records, of which, in the words of the Brooklyn Company's General Passenger Agent, "the effect has been to elevate the condition of those already in the service, and to enable it to have a better class of men."

BOWLING ALLEY, ETC., AT DEPÔT OF CUYAHOGA TRAMWAY CO., N.Y.

This admirable principle has been already introduced successfully into this country by the Corporation of Liverpool, whose tramway service and servants are the envy of less fortunate towns. At several depôts are to be found recreation-rooms as described, with stage, piano, billiard and reading tables, supplied with papers, and a small library. These are entirely under the management of a Social, Athletic, and Thrift Society, with six branches at as many depôts, and one at the central office, each with its own responsible committee and secretary. All meet monthly at the office, and the general executive arranges an annual entertainment on two nights, so that all may be present one time or other. The Corporation lends the rooms — in the principal instance at least the disused hay-lofts of horse-car days—which it has fitted with stages, etc., and decorated, and also supplies light and heat. The men provide the equipment, raising additional funds as

MORECAMBE
Tr'y & Ry World

RECREATION-ROOM AT A LIVERPOOL CORPORATION TRAMWAY DEPÔT.

required by pierrot or dramatic entertainments or sports. There are about 1,650 members, including practically the whole force, though the penny a week subscription is optional. A great attraction is the series of special concessions the Society is able to obtain for its members from tradesmen and others, including railway and steamship companies, while the Corporation Baths Committee charges only half-price for tub baths, and a shilling a year for the use of the swimming bath—a privilege largely availed of. The Society has also leased from the Corporation a fine recreation ground, towards the fitting-up of which that body contributed £100. At each branch there is a refreshment stall, equipped by the Corporation, but worked on a paying basis by the men. Manchester has already followed suit. In Sheffield the Corporation tramway employees run a restaurant of their own in the centre of the town.

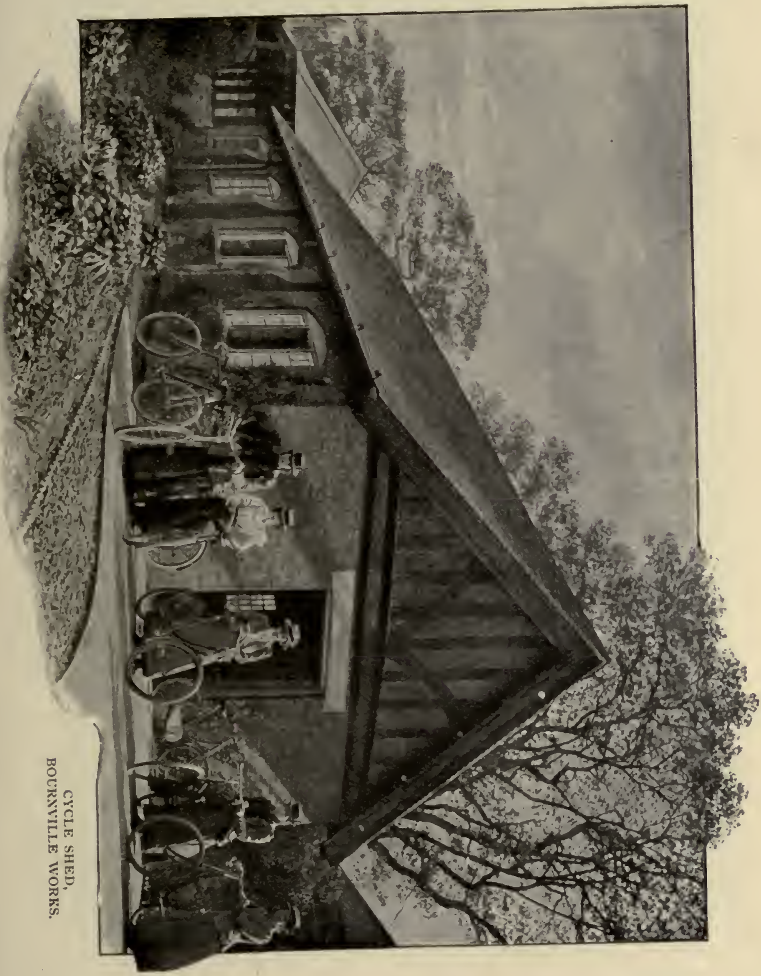
Organized Recreation.

All that is desired is not to be achieved by merely placing institute or grounds or apparatus at the disposal of employees, especially those unused to such luxuries. It becomes, therefore, in many cases an important duty of the Welfare Manager to direct recreation while appearing in the matter as seldom as may be. It was by organizing recreative clubs that the Social Secretary of the Proximity Mills of Greensboro' first secured her hold upon the confidence of those she had come to help, and a leader in games wields a wonderful power if willing to lead elsewhere also. But every effort should be made to train the workers themselves to lead, and also to manage the various clubs entirely, otherwise their failure, sooner or later, is assured.

Journeying to and fro.

Although a matter beyond the limits of yard or factory, the methods of coming to work and returning home have an important bearing upon the subject of recreation. Where it is possible—especially for those engaged in sedentary occupations—to either walk or bicycle to and fro, the obvious advantages hardly need dilating upon. But when the distance is beyond a walk, if bicycles are to be encouraged, proper accommodation must be provided for them at the works; and this is always worth while. At Bournville Messrs. Cadbury have built a handsome shed opposite the factory, wherein two hundred of their workers may store their machines, inflating the tyres when necessary by simply turning on compressed-air taps. Among other English firms providing bicycle sheds are Messrs. Burroughs & Wellcome, Messrs. Brunner, Mond & Co. and Messrs. Lever Bros.

The National Cash Register Company has a "stable" for the bicycles of no less than eight hundred of its employees, going so far as to engage lads in keeping them clean as well as to inflate the tyres by the same method as that employed at Messrs. Cadburys'. The Acme White Lead Company also furnishes a cycle shelter and compressed air. The Waltham Watch Company makes a charge for such accommodation, which in one year yielded over £40 to the Mutual Relief Fund, to say nothing of members whom the exercise kept independent of the Fund. The Gorham Manufacturing Co. provides



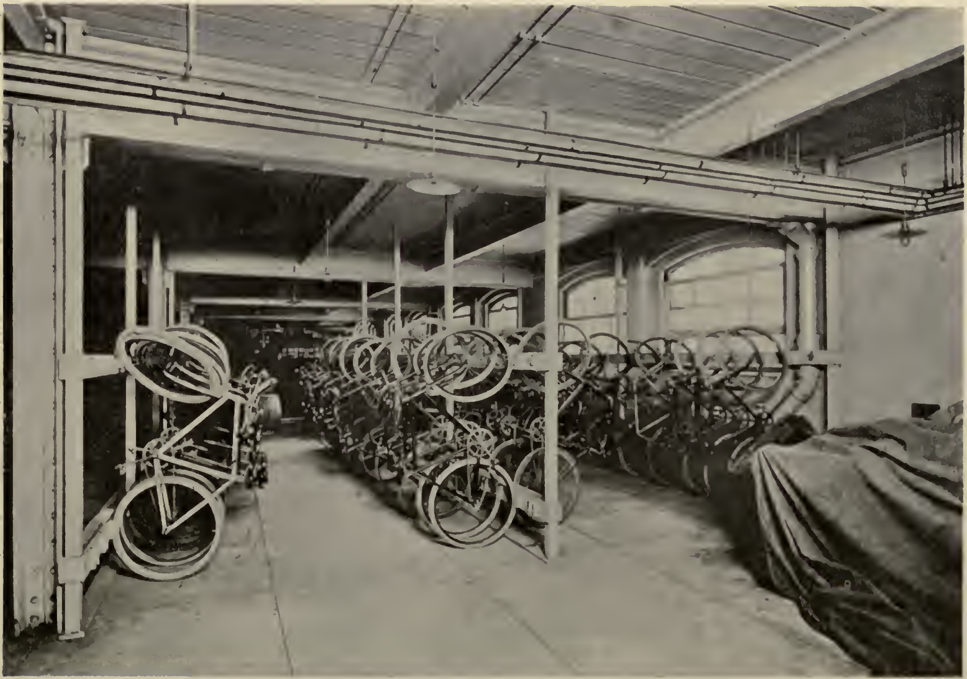
CYCLE SHED,
BOURNVILLE WORKS.

four hundred numbered racks. The Eastman Kodak Co., the Pope Manufacturing Co., the Natural Food Co., and Messrs. Cheney Bros., are among other pioneer American firms in this far-seeing provision. A good example is set in Germany by the Hamburg Rubber Comb Company and the Heyl Leather Works at Worms, which not only furnish accommodation for the bicycles, but supply the machines against weekly payments of eighteenpence, probably no more than the fares hitherto paid without return, the first-named firm having so provided two hundred in one year, and the latter seven hundred in several years.

An instance of thoughtful provision which is probably unique is the neat little carriage and pair placed at the disposal of their girls by Messrs. Heinz. Every fine week morning this starts out full of girls for a whole day's picnic, with a well-packed hamper. Each of the seven hundred girls gets her turn in rotation, receiving her usual pay just the same, but preference is granted when desirable to those whose ill-health gives them a special claim to consideration.

Holidays.

Even this, however, does not exhaust the sphere of recreation in relation to employment, for only if wisely planned and organized do such holidays as are afforded become what they should in this respect. Too often holidays are spent in ways which really incapacitate for work, and do more harm than good, as any one can testify, if only from personal experience. It therefore becomes worth while for the wise employer to co-operate with



SYSTEM OF STACKING BICYCLES FOR EMPLOYEES OF THE NATURAL FOOD CO.

his employees in enabling them to obtain as much recreation in its fullest sense as he can secure from his own vacation.

But it is not always that the holiday itself is enjoyed by those most in need of it. Employers differ widely as to the vacations permitted, as widely as in any other custom, but while the necessity for holidays for those holding important positions, and even for the clerks under the master's eye, is fully recognized and met, the humbler mechanic or operator must as a rule toil on till sickness intervenes. Surely it is not greed alone that underlies this mistaken policy; it is a failure to realize that the

WAGONETTE AT THE DISPOSAL OF MESSRS. HEINZ' GIRLS.

whole fabric, with all its gains, must depend on the sweat of the toiler. None who recognize this, and give all regular hands their meed of vacation, while still drawing pay, have any reason to regret this act of simple justice. In the long run they are more than recouped by better and more faithful service. A careful adjustment of dates avoids dislocation or stoppage, but some firms find it more simple to "shut down" the whole establishment for a week or two in the slack season. The Waltham Watch Company does so for a fortnight. The South Metropolitan Gas Company was probably the pioneer British firm in holiday granting, beginning many years ago by allowing a week with pay, and a few years later doubling this for employees of three years' standing.

Messrs. Crosfield, of Warrington, also set a fine example in this matter. Every one who has been in the continuous employ of the firm for fifteen months on April 1st, is allowed a week's holiday with full pay during the summer months, the choice of date being left as far as possible to the individual. Conditions, based mainly on punctuality and regularity, are attached to these holidays, and have each year since 1900 been made more stringent, yet the percentage of employees obtaining them has steadily increased as follows: 1900, 57 per cent.; 1901, 63 per cent.; 1902, 66 per cent.; 1903, 77 per cent.; 1904, 84 per cent. When it is realized that this increased percentage of holiday winners practically means a corresponding increase of efficiency, the value this wise firm gets for its money is at once apparent. Leave of absence from work is always granted at other times as well, on sufficient reason.

Every man on the permanent staff at Guinness's brewery is allowed from one to twelve days' holiday during the year, according to class, on full pay, in addition to the annual fête given to all employees with their families, and an annual excursion day.

GYMNASIUM,
MESSRS. JOSEPH CROSFIELD AND SONS.

This latter each selects, receiving a free ticket for himself and his family, and five shillings in cash, or if a single man, half-a-crown and a ticket for a friend, up to fifty miles on any line.

Messrs. Brunner, Mond & Co. allow all who have not lost more than two days during the year without permission a week's holiday in the year on double pay: formerly three days' absence were required to disqualify, but 98 per cent. manage to attain the required standard, which is highly creditable. Mr. J. G. Graves allows every employee a fortnight's holiday during the year at the firm's expense. Messrs. Thos. Adams & Co. maintain a cottage in the country, to which two to four of their girls are sent every week from May to October for a fortnight's rest on pay, in order to maintain their health. Messrs. Burroughs and Wellcome give an annual holiday of one week to all, without deduction from wages.

The Bournville Works are closed annually for twelve to fourteen days at the end of July, when most of the employees leave home. As these holidays are permanently arranged, the workpeople are prepared for them, and large numbers spend a fortnight at the seaside or elsewhere, many availing themselves of railway excursions specially run to many parts of the country. One of the most interesting and advantageous of the holiday arrangements in connection with these works is the Summer Camp for the members of the Youths' Club (under the age of twenty-one). At a cost of eighteen shillings for those under eighteen, and twenty-two shillings for those over that age, about a hundred lads go each year to the seaside for ten days, railway fares and four meals a day included. Each "camper" has to take his turn at fatigue-duty—preparing and cooking the meals. There is a Commanding Officer (the Club Manager), a Deputy Commanding Officer, and a Captain for each of the tents. Sports are usually organized for one of the days, and cricket matches are arranged with local clubs, while there are always facilities for hockey, football, and other games. If boating is safe, a boat is at the disposal of the camp. There is no doubt that but for this admirable institution a great proportion of the number who at present join would spend their holidays at home, deriving comparatively small benefit from them. At the first camp many of the lads saw the sea for the first time.

In addition to these regular holidays, each department of the works has its annual day's outing separately in the time of the firm. This system brings fellow-workers and shop-mates in closer contact than is possible with mass outings, such as are more generally organized by large firms. Reports by those taking part in the various excursions, the goals of which are chosen by vote, appear during the summer in the Works' Magazine. Illustrations, with short descriptive notes, of many seaside resorts hang in the dining-room, and assist in making a wise choice. The Works' Savings Fund helps many to prepare for the holidays, the precise dates of which are fixed two or three months in advance, about eight days before the August bank holiday, in order to give employees the advantage of cheaper and less crowded accommodation. Some firms have a special holiday fund into which a small sum is paid weekly in order to assure sufficient cash to enable a profitable outing to be indulged in when the time comes.

YOUTHS' HOLIDAY CAMP AT BORTH, IN CONNECTION WITH THE BOURNVILLE WORKS: ON "FATIGUE DUTY."

In America, where they are so far behind the times as rarely to allow even the Saturday half-holiday, numerous bright examples of summer vacations are to be found. The Acme Sucker Rod Co., for instance, acts up to its motto, the "Golden Rule," by allowing a week with pay. Messrs. Marshall Field & Co. allow each employee two weeks' vacation on full pay during the summer, and, on the other hand, in addition to paying fully for overtime, give 2s. to each so detained to purchase a good meal. Messrs. Ferris Bros. not only give a fortnight's holiday with pay to most of their employees—girls—but entertain them ten at a time at a seaside cottage. The Siegel-Cooper Store, of New York, has adopted this system too, issuing a neat personal card of invitation to each of its 2,000 young women, asking her to say when it would be convenient for her to spend a fortnight at their seaside home. The Chicago Telephone Co. allows its operators a week at least with pay, those earning over £10 a month enjoying double that time. The National Cash Register Co. also gives regular holidays to its women workers, and on special occasions makes handsome provision for their outing as well, as instance the trips to St. Louis to be described in the next chapter. Messrs. Croft and Reed, of Chicago, not only give a fortnight's holiday on pay, but Saturday afternoons as well; and Mr. W. C. Baker of Hoboken (maker of car-heaters), grants, in addition to six bank holidays, one week to workmen and two weeks to officials, on full pay. The Shepard Store of Providence, Rhode Island, grants all girls one year in its employ two weeks' holiday on full pay, recommending them to boarding houses in the mountains, and if necessary helping towards the expense of the journey.

In Germany the Spindler Dyeing Co. allows the same privilege to workmen and officials. The Teubner Press, at Leipsic, has adopted the excellent plan of not only allowing the holiday, but of making a grant towards expenses from a special vacation fund, allowing for an eight days' outing 30s. to workmen, or 20s. to assistants and women. The Carl Zeiss Concern, in addition to ten or eleven public holidays during the year on full pay, allows each workman six days on standard time wage, the dates allotted being distributed over the twelve months, so as not to interfere with continuous working. The Dutch Companies directed by Mr. Van Marken allow three days in the year, together or separately. In France the famous opera-glass makers, Messrs. Baille-Lemaire, who have done so much for their employees, making it "a cardinal principle that the men shall be kept in good repair as well as the machinery, at the expense of the house," treat their apprentices to a fortnight's entertainment annually at M. Baille's country seat.

Gardens.

The value of gardens or allotments, in which one of the most healthful forms of recreation may be taken before or after work-hours, is fully recognized by many employers, who have made ample provision in this respect, but the consideration of examples must be deferred till the question of the home-life is dealt with in

Part II.[1] A mention of boys' gardens will not be out of place here, however, and these have been laid out in connection with the works of the National Cash Register Co., the Natural Food Co., the Nelson Co., Messrs. Cadbury and Messrs. Rowntree, for the purpose of providing healthful educative recreation for the younger hands and sons of elder ones. They are

BOYS' GARDENS, NATIONAL CASH REGISTER CO.

but minute "allotments," seed and other requisites for which are provided the first year, and instruction given, prizes being offered for the best results and methods. Messrs. Cadbury have gone a step further, and have provided also girls' gardens with regular lady teachers. The yearly rental of an allotment is one shilling.

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[1] See pages 430 and 438.

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The "N.C.R." Co. has allotted three-and-a-half acres close to the factory, divided at first into seventy-two plots, later into fifty-seven, to secure a better landscape effect. Each plot is now ten feet by a hundred and seventy, and the produce in 1904 included eight tons of vegetables, though that of 1903 was only five tons. This was largely due to the fact that many of the young gardeners were in their second year. In the former year between fifty and sixty had to be expelled to maintain discipline, so that some of the plots suffered the initial experiments of as many as five tyros: during the latter year only fifteen had to be expelled, and no plot was tried more than twice. An exact record is kept of all seeds, bulbs, etc., distributed to each, and a card record of attendances, hours worked, and crops gathered. Detailed instructions are given to all, and a pro-

PARDONABLE PRIDE.
Scene in an "N.C.R." boy's garden.

fessional gardener is in attendance to give advice and instruction on all school holidays. Bad marks in the prize contest are inflicted for "demerits," such as non-attention to gardens and infraction of rules. The first four prize-winners last year were "fresh men." They had put in respectively 200, 185, 190, and 175 hours, and had raised 663 lbs., 516½ lbs., 434½ lbs., and 444¼ lbs. of vegetables.

SOME OF THE "N.C.R." CO'S. BOY GARDENERS AND THEIR TROPHIES.

Such results could not be achieved without far-reaching disciplinary effects, and the implanting of tastes more lasting and more valuable than any vegetables, to say nothing of the labour saved to the great mischief-maker.

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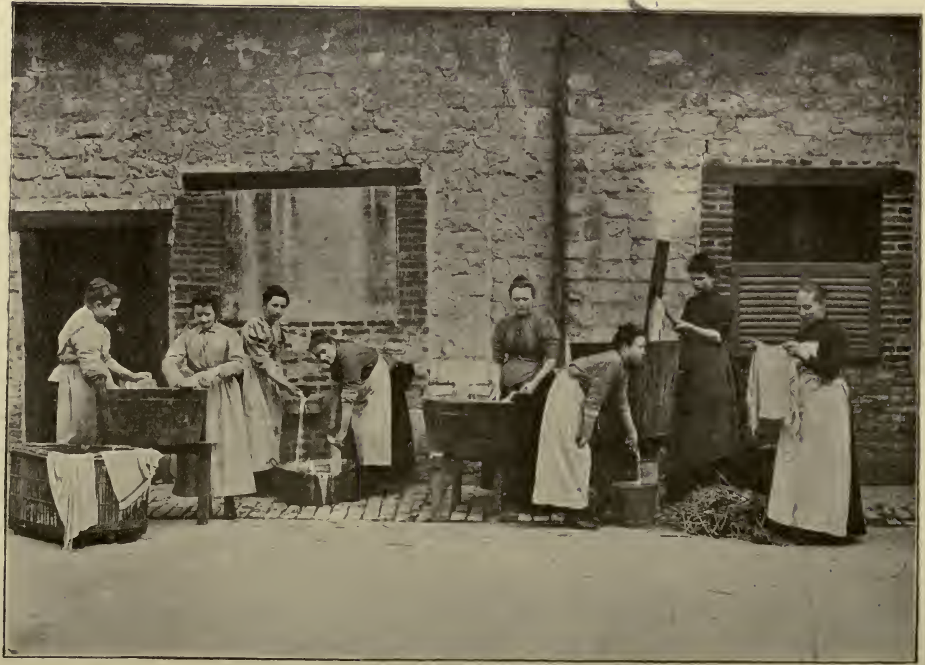

WASHING CLASS FOR MESSRS. HARMEL'S WOMEN.

VII. EDUCATION

Meaning of Education.

POPULAR conceptions as to the meaning and scope of education are commonly so restricted, and often so erroneous, that the association between it and labour will be by many confined to "half-timers," evening schools, and the like. But even where the absence of adequate school provision in the neighbourhood does not throw on the large employer the responsibility of meeting the needs of his workpeople's children, as it does in many countries, the factory and warehouse themselves offer a wide educational field. The learning of a trade, which used to be the privilege of all workmen, and is still that of a few, is in itself a valuable form of education, and even without "the three R's," a man who really knows his business is already to that degree educated. When mind and hand have alike received training, each is benefited by the other's improvement, and if the process is equally continued on both sides as the years pass, the utmost efficiency of the worker is obtained as by no other means.

The prevailing custom of first training the mind—too often of packing it only—up to a certain immature point, and then allowing it to lie fallow while another set of powers is called into action, perhaps for the remainder of life, is fatal to full development, either in the individual or in the business. The perfectly rounded man, as possible and as desirable in fustian as in broadcloth, can only be secured by the simultaneous development of both practical and theoretical, hand and eye, action and memory. And as this is the man who is essential, if productive or commercial efficiency is to be achieved or maintained, it behoves the wide-awake manager to see that what is lacking in the public system is supplemented by private exertion.

French Instances.

To take first as instances the work of our Continental competitors, we find many of the large employers providing kindergartens and elementary schools, as well as technical and evening schools for those already at work. Thus in France it is forty years since Messrs. Harmel established schools for the infants, girls, and boys of their mill-hands at Warmériville, and these have developed practical housekeeping and technical classes, while foreign travel is facilitated on account of its educational value. At the Bon Marché M. and Mme. Boucicaut and their successors have long maintained evening classes for their employees, in English, instrumental and vocal music, fencing, etc., those making greatest progress in our language being sent to London for several months at the cost of the firm to perfect themselves therein.

At Le Creusot Steel Works (12,500 employed), Messrs. Schneider Bros. provided for five thousand children in seven schools till the city took them over. The Blanzy Coal Mines (employing 8,000) have no less than fifteen primary and six infants' schools for six to seven thousand children ; the Anzin Mining Co. (10,000 employees) maintains boys' and girls' schools and kindergarten, as well as technical schools under the direction of their engineers ; MM. Menier (2,100 employees) maintain eight schools ; MM. Hippolyte Boulanger et Cie. (1,000) infant, primary, and apprentice schools ; the Baccarat Glass Works (2,000) infant, primary, and industrial schools, as well as apprentice schools for lads between twelve and fifteen, attending from 5 to 7 p.m., and technical schools 4.30 to 6 p.m. ; the Champagne Iron Works, the Waddington Cotton Mills, the Seydoux Woollen Factories, and the Peugeot Iron Works, ordinary schools ; the Lafarge Lime Works, primary and housekeeping schools with a "Youths' Circle" to train bright lads for foremen ; the Vosges Woollen Tissue Co., apprentice schools ; and the Thaôn Dye Works, manual and training schools.

German Instances.

In Germany the enormous size of the various Krupp works places them easily ahead in the variety and extent of their educational establishments, including secondary schools which apprentices are obliged to attend ; sewing and knitting schools for children whose fees are returned in the form of a savings bank deposit, if regular attendants ; an industrial school for women and girls to learn sewing and dressmaking as trades ; and housekeeping schools, At the Essen Housekeeping School the course is for four months, twelve new pupils being admitted every two months, and the hours are from 7 a.m. till 8 p.m. The only charge made is 3s. a month towards food, and even this is sometimes remitted. The produce of the kitchen is utilized in an attached restaurant where 4d. dinners are supplied to the children of widows, or of workmen who are ill, or whose wives are in any way prevented from cooking for their families. Free meals are also provided for the destitute on the order of the sick fund committee.

COOKING CLASS AT ESSEN HOUSEKEEPING SCHOOL.

Each girl cooks for ten in accordance with directions hung on the wall, the teacher and assistants tasting and criticizing before passing the result for serving. The household department instructs in management, purchasing, mending, washing, and ironing, no fancy work being included.

IRONING CLASS AT ESSEN HOUSEKEEPING SCHOOL.

Another German firm recognizing the importance of housekeeping to the workers is the Badische Anilin- & Soda-Fabrik, which has built a special school in which to teach it to thirty-two pupils at a time—eight of whom sleep on the premises—the course lasting a year. Instruction is given in cooking and the preparation of food generally, washing and ironing, housework of all kinds, kitchen-gardening, marketing, needle and sewing-machine work, and the cutting out, making, and repairing of linen and clothes. Theoretical instruction in the principles of human nourishment, the value of foodstuffs, hygiene, the nursing and care of invalids and children, and household book-keeping is also imparted by specially qualified teachers, so that the equipment of graduates must be thorough, and make them most desirable partners.

Herr Peters, of Neviges, near Elberfeld, maintains cooking and housekeeping schools for girls and women, and a manual training school for boys, in which card-board work, carpentry, turning, modelling and wood-carving are taught by his employees in work-time. There are two cooking courses meeting two evenings a week in the "Welfare Institute," eight girls in each. Herr Ten Brink includes among the excellent institutions for the benefit of his 1,200 weavers near Constance, a "housekeeping sister," who goes from home to home showing mothers of families how to cook and keep house, often providing the materials for trials of "those inexpensive but nourishing dishes which are to be seen daily on the tables of the well-to-do, but which the poor are usually the last to adopt." The Heyl Leather Works at Worms (4,000 employed) have kindergarten, sewing, and cooking schools. The North German Jute Factory at Schiffbeck (1,500) maintains five classes for boys between twelve and fourteen, held in the factory from

8 to 11 a.m., and corresponding classes in the afternoon for girls; secondary school work for an hour or an hour and a half in the evening, and two hours' sewing, knitting, and mending for the girls on Saturday afternoons.

SEWING CLASS AT ESSEN HOUSEKEEPING SCHOOL.

The Kübler and Niethammer Paper Works, near Waldheim, have kindergartens and housekeeping schools; the Hamburg Rubber Comb Company (1,200) pays the fees for continuation and trade schools. Herr Brandts, of München Gladbach, makes attendance at his sewing schools compulsory for girls under eighteen, allowing an hour and a quarter of working time for this twice a week; he has also a cooking school. The Brothers Heyl, of Charlottenburg, dyers, through the influence of the wife of one of them, turn their attention specially to the children connected with their works, rightly believing the earliest steps to be the most important. They established boys' and girls' schools of domestic economy, since taken over by the town, including a small furnished workman's house, in which all the work is done by the girls, including cooking for the boys, who in another house learn carpentry, shoemaking, gardening, etc., all out of ordinary school hours. Wages for the work done are paid into savings' bank accounts. The Marienhütte Iron Works maintain a continuation school for apprentices, with classes twice a week, from 5 to 7 p.m.

Other Continental Instances.

In Holland the Van Markens have sewing and cooking schools and kindergartens, as well as an apprentice school in work hours—7 to 9 a.m.—and evening, language, book-keeping, commercial law and manual classes. Apprentices do not, however, meet with favour among the workmen there, who will not be troubled to teach them: and as the elder women often proved too ashamed of their ignorance to attend the housekeeping schools, the rising generation is trained there instead. In Belgium, at the Marcinelles and Couillet Coal Mines (five to six thousand employed), there are infant and girls' schools. In Russia the Yaroslav Mills have schools for the children of employees, as also needlework and cooking classes. In Italy there are schools in connection with the Rossi Mills, and in Hungary with the State Iron Works.

APPRENTICE SCHOOL AT THE VAN MARKEN WORKS.

American Instances.

An American example of factory schools is afforded by the Pelzer Manufacturing Company of South Carolina, a State in which education is not yet compulsory. This firm keeps free schools open ten months in the year—the average open time for the rest of the State being but four months—and makes the attendance of children between five and twelve years of age a condition of the employment of their parents in its cotton mills. In the United States less is done in the way of general, but a good deal in the way of special, education, though in several cases where peculiar circumstances demand it, elementary education is still given. Thus at "The Fair," in Chicago, where, as in many other "department stores," large numbers of cash-girls and boys are employed, excellent provision is made on the premises for their instruction, though by the introduction of telephones, pneumatic tubes and cash registers their employment is being gradually dispensed with. The size of this particular establishment may be judged from the fact that from three to four thousand "hands" are employed, according to season.

CHILDREN'S SEWING CLASS, COLORADO FUEL AND IRON CO.

All between the ages of fourteen and seventeen are taught in a school on the premises for two hours daily, the subjects including arithmetic, geography, spelling, reading, singing and calisthenics, as well as special training to fit them for better positions. These young people attend from 8.30 to 6, except one day a week, when they leave at 5, with half an hour for lunch, and fifteen minutes or more for rest, morning and afternoon; they are also occasionally allowed an hour off to go "trading." Similar advantages are enjoyed by the cash boys at the Wanamaker Store, where the special aim of the school is to fit them to rise to higher positions, an aim already realized in many instances. Half the boys attend in the morning, half in the afternoon, in the firm's time. Military drill forms part of the programme. Another lucky set of cash boys is to be found in the Marshall Field Store in Chicago, in which the provision resembles that already described.

Domestic Economy.

The Ludlow Manufacturing Associates, employing some seven hundred women and girls in their mills, have organized sewing classes and three months' cooking courses four evenings a week. The practical nature of the instruction in the latter may be inferred from some of the items taught: the making and care of a coal fire, and the regulating of an oven; washing glasses, silver-ware, greasy dishes and cooking utensils, especially those used for milk; how to buy meat, choosing the best cuts for roasting, braising, stewing, and boiling; making the most of inferior cuts; choosing poultry; cleaning and boning fish; measuring and mixing; simmering, boiling, steaming, roasting, broiling, frying; soup-making; bread-making, steaming stale bread; cooking homely and inexpensive dishes.

The National Cash Register Company maintains a kindergarten for the children of its employees, a Saturday morning industrial school for girls, a cooking class twice a week, and sewing and millinery classes. The cooking course consists of ten evening lecture-demonstrations of two hours each, after which each girl in the factory has the privilege of serving one week in the kitchen on full pay, under the charge of a special instructor. Those about to leave to be married are allowed a "review" course of a week, previous to their departure. Special stress is laid on the selection of nutritious foods in due proportion, the theory of cooking, kitchen economy (including the use of scraps), wise marketing and the choice of joints, with other such practical hints.

SEWING CLASS, NATIONAL CASH REGISTER WORKS.

During the winter months classes and weekly

COOKERY CLASS, NATIONAL CASH REGISTER WORKS.

lectures are arranged in hygiene, under a doctor and trained nurse, chiefly with a view to the prevention of disease. Physiology, feeding, and first aid in emergencies or accidents, are taught, and simpler "health-talks" are arranged for the juniors. Physical development is also taught to all, and there are

SEWING CLASS AT THE HEINZ FACTORY.

classes for English or Bible-study or any other definite subjects for which there may be a demand.

Messrs. Heinz also have arranged cooking and sewing classes for the 700 girls among their 2,500 employees, most of whom come to them as raw and ignorant immigrants, few among them speaking English, for Pittsburg is a polyglot city in which the last language to be expected from the worker met on the street is Anglo-Saxon. The children of the workpeople of the Solvay Process (Soda-Ash) Company of Syracuse, N.Y. (employing 2,500), are instructed in sewing by the ladies of the officers' families. This was the commencement of their social work, directed first at the home-life in 1886, since which it has led to the erection of a commodious "Guild House" with a hall seating 600. No less than 275 girls meet there now in sewing classes, besides which there are dressmaking, cooking, and dancing classes, all free.

The Plymouth Cordage Co. maintains schools for kindergarten, the Sloyd system, basketry, cooking, and mechanical drawing. The Sloyd classes are held for boys four nights a week, and once for girls, a small fee being charged for this and the other mechanical classes, but the remainder are free. The cooking classes are held after school, from four to six, and are open to all from the age of eleven, for a three years' course. "Probably no branch of the school does more real good than this," says the Welfare Manager. At North Easton, Massachusetts, in connection with the Ames Shovel Co., there are sewing and cooking classes for girls, also in wood working and mechanical drawing for boys. Messrs. Cheney Bros. have arranged for all daughters of their employees over eleven to have a hundred lessons in cooking at the South Manchester Schools, where their brothers receive manual training in woodwork and learn mechanical drawing.

SLOYD SCHOOL OF THE PLYMOUTH CORDAGE CO.

The Colorado Fuel and Iron Company has undertaken the education of the youngsters in its mining camps in no half-hearted way, for before the State law provided free kindergartens it had established them in most of its camps, finding this the most effectual agency for reaching every member of the family. Indeed, the extensive social work now being done by this admirable Company may be said to have developed from the interest taken by the wife of the manager in the children she saw about her, which led her to open a kindergarten for them twelve years ago. Now that the schools are State-controlled, the Company, although paying 60 per cent. to 95 per cent. of the taxes, supplements the State provision in many directions, lending extra accommodation and furniture when required, and offering special inducements to diligence.

COOKING CLASS, COLORADO FUEL AND IRON CO.

Additional courses of lectures on health and domestic economy are delivered by the Company's officials, cooking and sewing classes are arranged, including a popular cooking-class for boys; a model home is kept on exhibition in one of the villages;

public recreation- and reading-rooms are opened to counteract the "saloons," in which, though liquor is sold, it is prohibited to treat even a guest, and fancy prices are charged for spirits, moderate prices for drinks with a minimum of alcohol, and less for "soft" or harmless beverages. Efforts are also made to establish some special industry in every camp, so that each place may be known for its own manufactures, and remunerative employment thereby be found for winter evenings. There are boys' clubs and girls' clubs, mothers' clubs and thrift clubs; a "Women's Basketry Club" and a "Child Study Club"; travelling libraries and circulating art

SITTING-ROOM OF CLUB AT A COLORADO FUEL AND IRON CO'S. CAMP.

collections; night schools and gymnasia, shower-baths and hospitals. Comfortable houses are also being erected to replace the old "shanties." When it is noted that the sixteen or seventeen thousand employees represent a population of seventy or eighty thousand souls of thirty-two nationalities, the magnitude of the task this company has set itself may be inferred, and the wide-spread effects of its enlightened policy, a model for our millionaire mine-owners in many parts of the world.[1] At Gladstone,

TEMPORARY READING-ROOM AT COLORADO FUEL AND IRON CO'S. CAMP.

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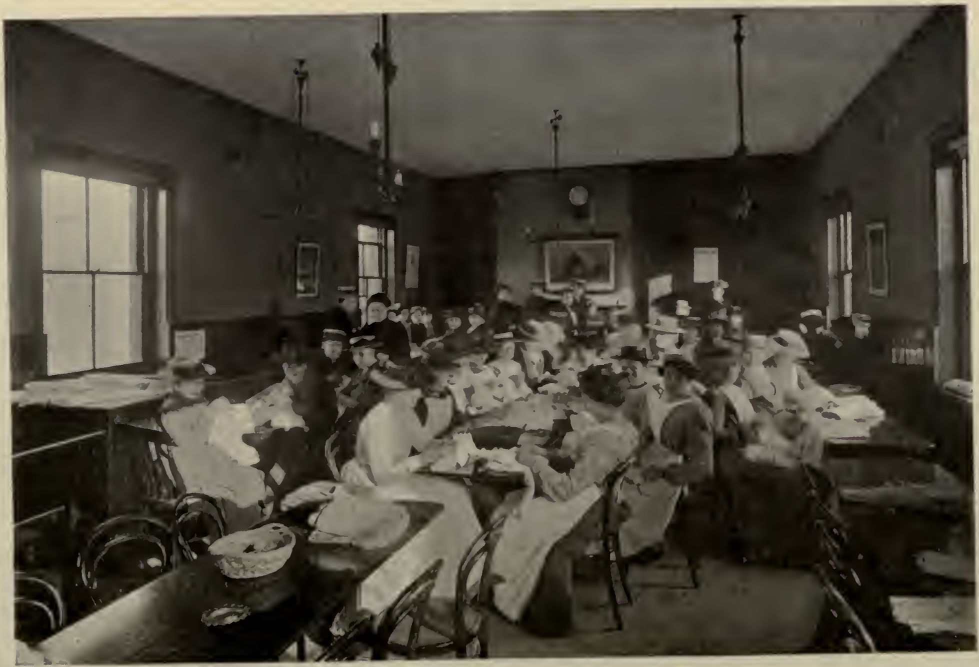
[1] Much of this is due to the encouragement of the predominating shareholder, Mr. Rockefeller.

Michigan, in order to counteract the baneful influence of certain "saloons" just outside their grounds, the Cleveland Cliffs Iron Company has erected a commodious club-house with dining accommodation, where beer, cigars and refreshments are sold at cost under conditions not conducive to the consumption of alcohol or other evil habits. At Ishpeming the upper floor of the office building is put to a similar purpose.

At the same time the importance of training our young factory women in domestic economy—not the fancy stitching and confectionery too often substituted for it—which is practically a lost art, cannot be over-estimated. Instead of learning practical lessons from their mothers at home, the girls of to-day rush into any work that offers so long as it allows them free evenings for "carrying on" with the boys, and thus waste the most valuable years between childhood and motherhood. When they marry they but drag their own generation a step lower than the last. "It appears to me," says the medical officer of health for Tottenham, in his last annual report, "that the Red Indian is not such a fool as many of his brethren in English towns. He chooses a woman for his squaw who can cook his food, make his moccasins, and even repair his wigwam. The wretched lad of our towns marries a tawdry slut who can, as a rule, do none of those things, or what correspond to them in civilized society. It is from this class, that those children proceed who are 'bold, pert, and dirty as a London sparrow.'"



SEWING DURING THE NOON HOUR AT MESSRS. COLMANS' WORKS.

British Instances.

In England sewing and cooking schools are to be found in connection with the works of Messrs. Boden, Cadbury, Colman, Crosfield, Fry, Lever, Rowntree, and others. The last-named charge the members of these and other educational classes 2s. per course of twelve lessons, whether present or not, and they have a special primary night school for men who did not go to school as boys, and who would hesitate to mix with them in public classes. They have also shorthand classes for factory workers only. Messrs. Lever Bros. teach confectionery and shorthand at a fee of 3s. each class. With Messrs. Colman instruction is free, but attendance is usually better where a nominal charge is made. The Carrow Schools at Norwich, now under the local educational authority, were built and for years maintained by this firm. Messrs. Crosfield include laundry work in the curriculum, the girls being taught to wash and iron their own overalls. At the Boden works it is Mrs. Boden herself who conducts the sewing class. Messrs. Cadbury have a plain sewing class one night a week, and blouse classes three nights a week, taught by certificated teachers: also a unique gardening class for girls, the attendance at which is between twenty and thirty. For their boys there is a boot-making class, with elementary and advanced divisions, which becomes increasingly popular, the entries numbering about forty. Messrs. Fry and Sons have for many years maintained a night school for boys and girls, though of late years outside provision has to a large extent met the necessity.

Technical Education.

Still more important than domestic economy, from the point of view of the workshop, if not of the home which supplies the workers, is the opportunity afforded for technical education. This has been recognized in America and on the Continent, and England is waking up in the matter, employers of labour beginning to co-operate with educational authorities in facilitating the use of existing schools. Thus Messrs. Cadbury Bros. encourage all youths under nineteen to attend the Birmingham technical classes by paying 7s. 6d. a year each towards their fees, provided they put in a certain number of attendances. This is in addition to a local technical school in Bournville, which the firm largely assists. The classes patronized are, in order of preference, boot-repairing, plumbing,

EVENING CLASS OF NATIONAL CASH REGISTER CLERKS LEARNING ABOUT THE MACHINES.

geometry, building construction, carpentry, chemistry, electricity, drawing, and carving. Corresponding privileges are offered to girls under the same age. Messrs. Burroughs and Wellcome pay the fees of those who make sufficient attendances at local technical and chemistry classes to sit for examination, and encourage the more advanced by paying the fees and half the fares to Woolwich, even in special cases permitting the use of their own laboratories for experiments.

Messrs. Rowntree refund fees and other expenses to those of their employees who make satisfactory attendances at the city art, science, technical and other classes (shorthand and gymnastics excepted). Valuable book prizes are further offered for passes of exceptional merit. Messrs. Davidson, machinists, of Belfast, offer their apprentices 5s. for each subject in which they make 75 per cent. of possible attendances, and the same for home-work which gains 50 per cent. of possible marks. In addition 10s. is paid for each pass in the elementary or advanced examination, so that every apprentice can secure £1 per subject each session. Half of this is advanced to the intending pupils for the purchase of instruments and books, the subjects referred to being machine construction, applied mechanics and steam.

Messrs. Jas. Templeton & Co. encourage their carpet workers to attend the local weaving college, issuing circulars to them suggesting the departments it is advisable for them to study. Formerly they held their own drawing and cooking classes, but outside opportunities have done away with the need for them, and only their ambulance class continues to flourish. Messrs. J. & P. Coats pay the fees of all junior male workers at the local technical college or continuation schools, for mathematics, machine construction, electrical engineering, chemistry, book-keeping, French, German, etc., the head-masters reporting direct to the firm.

An instance of similar provision for girls is afforded by Messrs. Sélincourt, mantle makers, of Pimlico, who send about a hundred of their apprentices to public dressmaking, tailoring, and gymnastic classes at the nearest Polytechnic, paying all fees except 2d. a week, providing the material necessary for a dress for each, and allowing the pupils to leave an hour earlier for the purpose without reduction in wages. Annual prizes are also offered in each division. Several of the students are already acting as forewomen, and Messrs. Sélincourt consider the outlay involved a business investment which will keep them supplied with good forewomen in the future. This firm has also a lecture hall where weekly addresses are given, and other gatherings held, attendance being optional.

Messrs. Tangyes, Ltd., contribute a considerable portion of the master's salary for the instruction of special classes at the Birmingham and Midland Institute, open only to their own employees, in mathematics, solid geometry or projection, building and machine construction, and machine drawing. Five shillings a term is charged for one class, half a crown extra for each additional class, and scholarships are offered in connection with the Science and Art Department examinations, which all are expected to attend. Messrs. Hazell, Watson and Viney permit attendance at technical classes in work hours without deduction, while attendance at evening classes is also encouraged. Messrs. Brunner, Mond & Co., who built, and formerly maintained, an elementary school for a thousand children, now taken over by the authorities, make it a condition that all employed under nineteen "(not being apprentices) shall attend the evening classes at least three times out of four that the school is open . . . and that apprentices shall so attend during the whole period of their apprenticeship." Those attending 95 per cent. of the classes secure a return of the fees paid under special arrangements with the Northwich and Manchester Technical Schools, to the latter of which the most promising are enabled to travel. Messrs. Guinness pay the fees of their lads at the local technical schools, allowing "time off" to those whose teachers report satisfactory progress, as well as offering half-yearly prizes and exhibitions.

Messrs. J. & E. Hall, Ltd., refrigerator makers, of Dartford, also insist as far as possible on their apprentices becoming educated technically during the five years of their indentures, by regularly attending the local classes. Every applicant between the ages of fourteen and sixteen must have passed the seventh standard of the elementary schools, and must undertake to attend the technical classes, and present himself for examination. Those who in their third year pass in stage one of mathematics and two other subjects (elementary steam, machine drawing or applied mechanics) qualify for an extra shilling a week; and those who in their fourth year pass the advanced examination in any two of these subjects, with proficiency in the elementary stage of at least one other, qualify for an extra two shillings a week. All who make two-thirds of the attendances and present themselves for examination have their class fees refunded.

Messrs. Joseph Crosfield and Sons pay all fees for local evening technical classes, provided 60 per cent. of possible attendances are made, as well as offering an equal value of money prizes for excellence of progress. The introduction of this generous system having raised the percentage of students among their lads from fourteen to seventy-three, attendance was thereafter made compulsory to those under seventeen. It is contemplated to raise this limit year by year to twenty, when those who enter the firm's service at fourteen will have six years of compulsory evening classes with fees paid, and the opportunity of earning an equivalent amount in prizes. Examination papers in every-day matters are set for all under seventeen.

Messrs. Debenham and Freebody insert a clause in the indentures of all apprentices that they shall attend public commercial classes (formerly these were held on the premises, now a special arrangement is made at a central school). Classes are attended from two to four o'clock in the firm's time, and weekly reports are sent in by the teachers, the pupils having to pass the annual examination of the Chamber of Commerce.

M. Lemaire, of Paris, established a boarding school as far back as 1861, when, owing to the decay of the apprenticeship system, he found it difficult to maintain the standard of workmen required. From thirteen or fourteen to seventeen or eighteen the lads are boarded, lodged, and educated by the firm, besides receiving a small but increasing sum as wages. In the workshops they work under supervision ; in the evenings their general education is provided for, with special attention to geometrical drawing. The great Chaix Press of Paris has also a model system of instruction for apprentices, a school of printing.

In the United States the apprenticeship system has been revived at the Baldwin Locomotive Works. Their apprentices are divided into three classes, to enter the first of which a boy must be seventeen years of age, and have at least a primary school education. During a four years' course he is allowed to stay on one class of work only three months, and is moved from department to department until he covers the entire plant. While the schools are open he is obliged to attend evening classes twice a week, taking a special course in higher mathematics and mechanical drawing. He is paid from 12s. 6d. to 26s. a week during apprenticeship, on completion of which he receives a certificate and £50. A second-class apprentice must be a secondary school graduate, and serve three years on the same lines as a first-class apprentice. A third-class apprentice must be a graduate of a recognized technical school. There are now between four and five hundred apprentices of the several classes, and the system is proving of vast benefit to the works in providing a more intelligent and better class of labour than it is possible to get in any other way. The foremen are sent all over the country to see how other people work. If a foreman can show that by the use of certain tools and appliances he can save time and expense, they are furnished without question.

The New York Switch and Crossing Co., of Hoboken, pays the fees of its employees availing themselves of Industrial Science correspondence classes, and places at their disposal a "full line" of industrial and mechanical publications.

AGENTS' SCHOOL, NATIONAL CASH REGISTER CO.

The National Cash Register Co., believing that "a workman whose intellect has been sharpened by training, who has been taught to use his faculties with care, method and concentration, not only makes fewer mistakes, but turns out better quality and greater quantity of the product he is engaged in making," has instituted schools for almost every branch of the business. These include an Agents' School, which every salesman must attend before he is deemed competent to properly represent the Company and adequately "push" nearly four hundred varieties of machines; an Advertising School under the personal direction of the president; an Officers' School, where business management and policy are studied; a Foremen's School, a Janitors' School, a Waiters' School, an Office-Committee School, a school for the Guides who show visitors round, and even a school for the visitors themselves, who are entertainingly lectured on the salient points of this gigantic concern and its marvellous output.

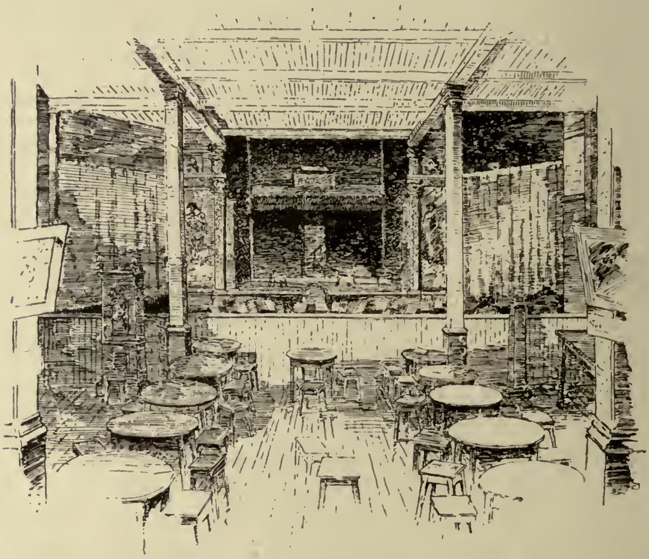
So thoroughly does the president believe that the education of his 4,000 employees is a paying investment, that on the occasion of the St. Louis Exhibition each head of department and his assistant, each foreman and his assistant, with their wives—400 in all—and 600 girl employees, were taken a night's journey—800 miles—in Pullman cars to see it, and were admitted, at the expense of the firm—some £2,800 in all. Moreover, two weeks' extra holiday on full pay was allowed to the whole 4,000, that they might spend that time in St. Louis, specially low fares being obtained for them and their families. This is not an institution which does things by halves, or believes in a "hit or miss" policy. The object always in view, in addition to the extension of the business and conducive to it, is the building up of character among its workers.

An equally noteworthy record of the same nature is that of Messrs. Lever Bros.' party at the Paris Exhibition of 1900, consisting of 1,600 of their workpeople over the age of twenty. Four special trains with ten tons of provisions on board were chartered to convey them south on an expedition the cost of which was over £5,000, while 2,000 of the younger employees were taken for a two days' holiday in the Isle of Man.

Factory Lectures.

So far mainly the education on special lines of specified classes has been discussed, but other more general forms of education have been successfully introduced into centres of labour. The first of these is the delivery of lectures, for which some firms make elaborate provision. Messrs. Heinz, for instance, devote the upper floor of one of their buildings to a magnificently fitted auditorium, seating 1,600, where not only are educational lectures delivered from time to time, but where concerts and theatricals may be organized, as well as gatherings in connection with the business. The Acme White Lead Co., although not competing with others in equipment, make lectures "a vehicle of teaching the value of light, air, and cleanliness in the homes and in the workshops," as well as of general supplementary education. So does the "N.C.R." Co. The Platt Ironworks Co., of Dayton, Ohio, inspired by this great neighbouring example, holds lectures or religious services for its men in the dinner-hour twice a week. The Filene Company arranges classes, lectures, and talks on salesmanship for its employees.

On the Continent of Europe the Yaroslav Mill, in Russia, possesses a magnificent reading-room, or rather hall, fitted with a stage whence on Sundays and feast-days lantern lectures are delivered by the priest and the technical managers. At other times accommodation is here afforded for concerts and amateur theatricals. Similar provision is made at the Norsky Factory, where readings in religion and history, illustrated by lantern slides, are given on Sundays; and at the Popoff Factory, where these take place in what is really a well-fitted theatre. At the Thornton Woollen Mills of St. Petersburg there are lecture-hall, reading-room and library, as well as a school for the children of the employees. In Germany the Heyl Leather Works, the Spindler Dye



THEATRE FOR EMPLOYEES IN MESSRS. POPOFF'S WORKS.

MESSRS. HEINZ' EMPLOYEES LISTENING TO A LECTURE IN THE FACTORY AUDITORIUM.

Works, the Marienhütte Iron Works, and the Mühlhausen Textile Industry Society, among others, are provided with winter lecture courses, as also are in Holland Messrs. Stork Bros.' Works, and in France the Blanzy Coal Mines, the Lafarge Limekilns, and the Menier Chocolate Works.

Numerous English firms do more or less in this way too. Messrs. Rowntree, for instance, organizing lectures and concerts during winter in a hall adjoining the dining-room, which is also used for religious meetings; Messrs. Crosfield and Sons arrange special courses of technical lectures on such subjects as electricity, with practical demonstrations, as well as fortnightly popular scientific lectures throughout the winter; for many years past Messrs. Tangye have employed a lecturer to give bi-weekly lectures or addresses in the messroom during the latter half of the dinner-hour, as far as possible on topics suggested by the men; Messrs. Chivers have bought a disused local chapel (a member of the firm having given a new one), and have converted it into a polytechnic; Messrs. Holmes have had satisfactory attendances at several winter lecture courses. Messrs. Guinness organize lectures for the men and their wives on food and its preparation, healthy homes, and the care of sick folk or children, as well as holding ambulance classes.

Reading-rooms and Libraries.

Reading-rooms and libraries of one sort and another form an important part of the equipment of the modern factory, and equally so of its educational system. "The first thing is to get them to read," says Mr. Laycock, of Indianapolis, of his employees; but it is

LIBRARY OF YOUTHS' CLUB, BOURNVILLE.

not the hasty perusal of sensational stories, scrap sweepings and daily papers which needs to be inculcated; they are but the thorns and briars which choke the minds of the uneducated who can only read. This being the unfortunate condition of a large majority of factory hands, sales-people, clerks, mechanics, and the output of primary schools generally, guidance in reading is even more important than provision of accommodation. The former usually depends on the Social Secretary, unless a capable librarian be employed, and in itself affords a most useful sphere of service.

Reading-rooms alone exist in too many of our factories and large places of business for it to be necessary to enumerate instances, and libraries in most of those referred to at home or abroad, though often the management and development of the latter leave room for improvement. Sometimes the firm accumulates a library or libraries of its own, technical and general; sometimes facilities for obtaining books from other libraries are afforded. Thus in each department of the McCormick Works there is a library shelf and desk furnished with the catalogue of the City Public Library, to which books may be returned on coming to work in the morning, and orders left for those required, which, if obtainable, will be found there in the afternoon, thus saving each reader a journey to the centre. The J. H. Williams Co. secures books from the City Travelling Library, in addition to a collection of its own at the works.

The Cleveland Hardware Co. has established in its works a branch of the local public library, to which about five hundred volumes are supplied at a time, together with the full catalogues, and all printed matter issued at the centre. This is in charge of one of the lady clerks, who attends to exchanges and furnishes monthly reports to the librarian, the monthly circulation amounting to about three hundred volumes. The first idea had been to form a special library at the works, and about three hundred volumes were begged for this purpose, but the present system is found to be far preferable. A small case is also placed near one of the factory entrances, in which any one who has done with a magazine of his own may place it that some one else may make use of it. The members of the firm take care to circulate in that way publications bearing on the industry in which they are engaged. The Potter Printing Press Co., of Plainfield, N.J. (300 hands), the Filene Company, the Patton Paint Co. of Milwaukee, and the Weston Co., have also installed branches of the public library in their works. The Gorham Manufacturing Co., which charges a penny per volume issued from a library containing 840, finds that about ninety-five per cent. of those borrowed are fiction. The Plymouth Cordage Company provides 4,000 volumes in charge of a trained librarian and assistant.

The J. R. Stetson Co., hatters, of Philadelphia, have a free library of 2,000 volumes in the works reading-room, and an assembly-hall to seat as many of their employees. At the Acme White Lead Works books are also drawn from a library of 2,500 or more volumes contributed by the company, by business clients, and otherwise collected. Its use is free, and is enjoyed by 60 to 70 per cent. of the employees. The 1,400 volumes provided by Messrs. Rowntree are regularly used by 20 to 25 per cent. of their people. Messrs. Debenham and Freebody subscribe for a large number of volumes (200) from the Book-Lovers' Library, which, till their return is due, are read by one after another, being exchangeable on the premises each evening. A subscription of one shilling monthly covers library, athletics, concerts, etc. The Bullock Manufacturing Co. pays half its employees' subscriptions to a circulating library in much the same way, making a speciality of technical publications. The library of the Westinghouse Electric Company is one of the features of an educational club, entirely managed by employees,

READING-ROOM AT PORT SUNLIGHT.

which organizes classes, lectures, etc., as well. "Men in the works realize that advancement is dependent upon preparation, and the company has shown a willingness to assist them in their endeavour to obtain knowledge."

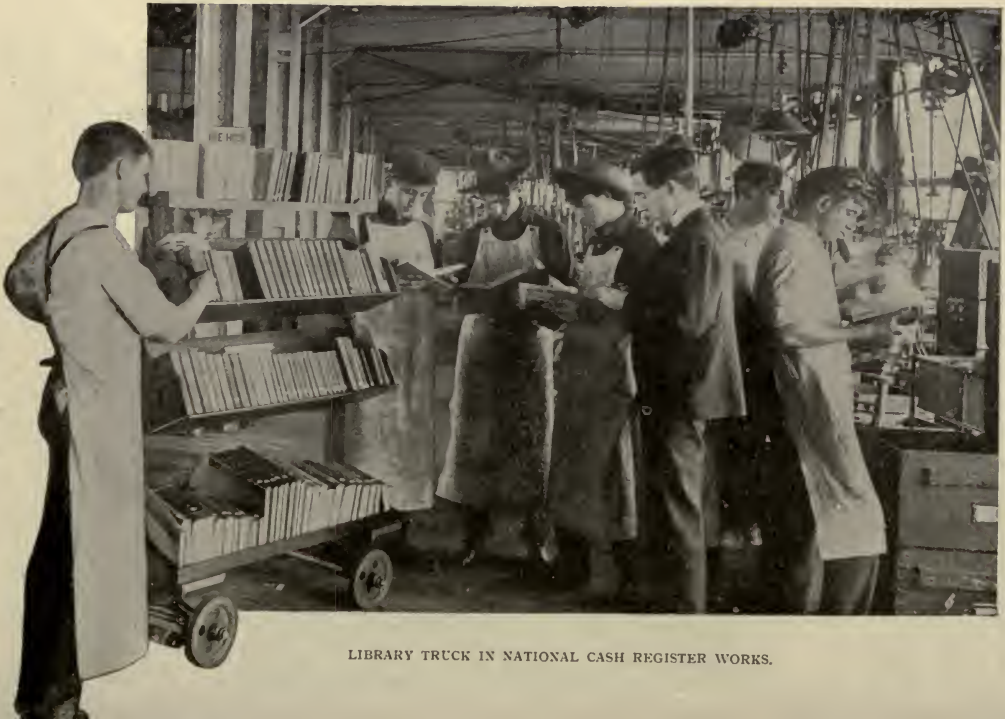
The "N.C.R." Co. maintains a selected library of standard works, expressly uncovered, that good designs may influence selection, as in the case of a boy of eight who took out a volume of Ruskin, "because of its beautiful cover." What could have accorded with the author's feelings better than that? One of the many excellent new ideas introduced here by Mr. Patterson is that of wheeled library trucks, each holding about 150 volumes, carefully selected as

READING-ROOM IN NATIONAL CASH REGISTER FACTORY.

representative, unless supplied to order by telephone to save a journey. These stands are brought to the main entrances of the various buildings at stated times announced by poster, when any employee on leaving the works may take a volume home.

"It is possible," says a report of the immense increase of circulation which the stands brought about, "to trace an almost direct line from the library to the suggestion-box. The men and women of the N.C.R. are coming to realize more and more that in the books in the cases on the first floor of Building No. I., and on the shelves of the travelling libraries, lie the means to gain an education which may have been denied them through adverse circumstances, or to ripen and expand the knowledge they already possess. . . . Means have been adopted whereby this information may be most conveniently distributed; for instance, should a skilled mechanic encounter a problem upon which he is not fully informed, and has not the time to look up the information, if he will notify the librarian the information will be located and the proper book sent him at the hour one of the travelling libraries visits his particular building."

Messrs. Spindler provide some 3,000 volumes in their general library, and 1,000 in the technical division. The Marienhütte Iron Works add 250 volumes a year. Baron von Stumm, the "Coal King" of Harlenberg, has provided an excellent library for his toilers, as also have the Badische Anilin- und Soda-Fabrik and the Carl Zeiss Concern, the former in a commodious club-house, and the



LIBRARY TRUCK IN NATIONAL CASH REGISTER WORKS.

latter in its "People's Institute." Messrs. Harmel have arranged for circulating libraries.

Messrs. Lever Bros. have recently established a free library at Port Sunlight with three thousand volumes and accommodation for sixteen thousand, at which the only charge is 2d. for a ticket.

LIBRARY: MESSRS. BURROUGHS AND WELLCOME.

Messrs. Burroughs and Wellcome have provided a spacious reading-room and library at Dartford, with four or five thousand volumes, with the privilege of drawing on a large scientific collection at the head office, a liberal supply of scientific publications being always maintained. Their library is, moreover, something of a museum as well.

Messrs. Cadbury Bros. make a speciality of their Youths' Library, open to all under twenty-one. Here, for a monthly payment of 3d. (or 1s. 3d. in advance for the half-year), the members enjoy meetings, classes, lectures, etc., as well as the use of reading, game, and other rooms, the library and the summer camp. Out-door sports are also arranged, and a natural history collection is being gathered in the class-room.

READING-ROOM OF YOUTHS' CLUB AT BOURNVILLE.

Special provision is made for the children of employees in some works, as the Augsburg Spinning Mills, Messrs. Kübler and Niethammer's Paper Works, and the Van Marken factories, a practice much to be commended. In the last-named instance, a branch of the public library is so adapted, supplementing a factory collection of 2,500, and 3,000 more advanced and technical volumes belonging to Mr. Van Marken himself, which he places at the disposal of the staff and principal employees. Over five thousand volumes in all were borrowed in a year.

An idea of what is being done under these heads in Russia, a country popularly supposed to be far behindhand in social service, may be gathered from the number of its industrial betterment institutions represented at the Paris Exhibition of 1900. These included 178 free libraries and lecture-halls, and 90 popular lantern lecture courses, *of which 79 were in factories.* Various employers had organized on their own or hired premises 29 evening lecture courses, 66 tea- and reading-rooms, 78 musical societies, and 42 popular theatres.

Educational Institutes.

In many important instances these various educational facilities are gathered under one roof in the form of clubs or institutes, some of which have been already described in dealing with their equipment for recreation ; but there are others in which the educational element is supreme, though no hard and fast line can be drawn. The Carl Zeiss Stiftung, for instance, has erected a "People's Institute" at a cost of £50,000, with museum, art gallery, library, reading-room, technical school, two lecture-halls, class-rooms, and studios. In England, the immense Armstrong Works at Elswick, Newcastle-on-Tyne, have long been provided with an educational institute—founded in 1848—

the membership of which numbers about five thousand, men paying 1d. a week, boys ½d., including classes, none of which are technical, attended by about seven hundred. The library of some eight or nine thousand volumes circulates about 40,000 every year. The North-Eastern Railway Works has also its Institute on a less extensive scale at Gateshead, where 4s. a year covers library, billiard- and class-rooms, including technical studies. All the great railways have such Institutes, some of them extensive and elaborate, placing them in the front rank in this respect, far ahead of most manufacturers.

Railway Institutions.

Besides making such provision at their main centres, and in America subsidising special Y.M.C.A's. for their employees, some railway companies have also rightly deemed it to their advantage to provide reading- and recreation-rooms with baths, etc., at most of their important stopping-places. The Santa Fé System is a pioneer in this respect, with librarians in charge at thirteen stations. Of the books issued, 40 per cent. are fiction, 15 per cent. historical, 10 per cent. biographical, 10 per cent. technical, 10 per cent. "general," and 15 per cent. reference. To encourage the men to buy their own books, these are supplied through the librarians at full trade discount. Magazines and periodicals, as soon as out of date, are distributed to the lonely huts of the "track men," often remote from civilization. Lectures and "straight talks" are delivered from time to time. The president of the line considers that the annual expenditure of some £3,000 involved by these measures is "wisely invested from a financial as well as from a humanitarian point of view," as it encourages economy, carefulness and fidelity, to the advantage of all concerned.

Religious Education.

But while general, domestic, and technical education are all of value in securing the best results from the workers, a still more important branch is recognized by some employers—their religious education. This does not, and should not, imply the inculcation of specific doctrines, but the raising of the thoughts above the daily toil, the struggle for existence, and the cares of life. Of this conspicuous examples are to be found in the informal morning service inaugurated many years ago by Samuel Budgett, of Kingswood and Bristol, and maintained to-day by such establishments as those of Messrs. Thomas Adams, Boden, Cadbury and Fry, among many who might be mentioned. Messrs. Crosfield also provide a works chapel. Even in France, where one does not often look for such things, the daily worship is to be found in the Baccarat Glass Works, which have a special chapel and maintain a vicar, and at the Harmel Works, which are managed in a distinctly Christian spirit.

The daily service at Messrs. Adams' factory, a direct outcome of Samuel Budgett's example, was inaugurated in the year of his death, 1851. A special chapel, seating eight hundred, was fitted up in the basement, where for thirty years or so one chaplain officiated, but now three incumbents of poor churches in the neighbourhood (never curates) are engaged for a month in turn. The average attendance, which is quite optional, is about six hundred, out of a total of some fifteen hundred. A special service book has been printed, adapted from that of Common Prayer. Similar arrangements are made at the dressing works, some distance away, where the whole five hundred employees may find seats in the chapel. The chaplain's duties include the visitation of the sick, and any monetary assistance he suggests is at once accorded. The service at Messrs. Boden's is held twice a week in their own chapel, lasting half an hour of the firm's time. Attendance, which is optional, is mostly confined to women. The beautifully simple service in the dining-hall at Bournville is conducted without set form by some member of the firm, once a week for men, and twice for women, as there is seating accommodation for only two thousand. As many sometimes assemble on the floor of the factory devoted to this use at Messrs. Fry's, where also a member of the firm conducts a simple service—hymn, Scripture portion, address, and silent prayer—lasting twenty minutes. Even in Japan we have an example, where the manager of the Fukuin Printing Company, a Christian, holds a service every Monday morning at the works, lasting fifteen minutes, to which the two hundred employees are invited.

The Young Men's Christian Association of the United States has a special Industrial Department which undertakes to organize branches in connection with large works and other centres of employment, the masters usually providing the premises, and the men the organization, both contributing to the funds. Or in a more modest way the Association arranges weekly noon and midnight Bible Classes, which last year had an average attendance of 2,500 in 175 establishments. "The easiest thing we are doing," says the secretary, "is to get working men to respond to the religious appeal; most people in their efforts on behalf of the working man take it for granted that the religious work is to be left out. I am unable to understand why a man who works with his hands is any less religious than the man who works with his head. We find the religious side of our work appeals to all denominations."

Many will object that such practices encourage hypocrisy and foster cant. It may be so in some cases, for evil is ever more active where good is wrought; but the experienced eye of the godly employer is keener far in the detection of insincerity than that of the critic—seldom able to recognize qualities of which he is not possessed; and the real help afforded to those who appreciate the service when it is conducted from the heart, far outweighs any possible lurking disadvantages. To those who object that "family worship" is out of place in a factory, it need only be answered that the social conditions of labour can only be ideal in proportion as the relations of the factory life approach those of a well-managed family. It is the absence of this feeling which provokes strife and unfair conditions. After all, no one can have failed to observe that it is just where the spirit which such practices indicate prevails that the position of the workers is most fortunate.

VIII. ADMINISTRATION

The Problem.

HAVING so far dealt prospectively with the advantages to be derived both by employer and employed from improved surroundings, adequate nourishment, and practical education, the point is now reached at which those individual interests meet, to harmonize or clash in the administration of the common business. The Labour Problem which here arises is described by Professor Gilman, an impartial and able authority, as "substantially the question of obtaining the best relations between labour and management, between the hand-worker, more or less skilful with his brain, and the man at the head of the concern, whose labour is chiefly, if not wholly, mental."

The real interests of these two parties, indispensable to one another, are identical, and neither can take advantage of the other without the common and only true interest suffering. The mutual object of both is to produce, under the best possible conditions for all concerned, the best possible article at the lowest possible price, in order to place it within reach of the greatest possible number of purchasers. This applies equally to production and distribution.

Grasping Capital.

Let Capital attempt to secure an undue share of the profits by paying less than a living wage, or by getting the work done under conditions prejudicial to the health and comfort of the workers; then it will inevitably share also the evils resulting from such a short-sighted policy. Only the lowest type of worker will be available, and the least and worst possible work will be done, with a great waste in friction. All the difference between the working of a well-finished machine and one put up only to sell will make itself felt in the showroom, and above all in the counting-house, as certainly as in the workshop. Prices will have to be low to secure any outlet at all, and this will probably lead to further attempts to cut down expenses in the wrong way. Such management knows no more what is its own interest than what is due to its working partners.

Grudging Labour.

On the other hand, let the workers, while rightly demanding a living wage as a minimum, and a fair share of the profits as a desideratum, attempt to do as little as they can in the time, or scamp as much as they can by the piece, or in any other way defraud the management, and the evil they have wrought will assuredly recoil on their own heads. This will come about directly in the ill-will and retaliation which results from the management's sense of being cheated, and indirectly by producing the same effects as when the management alone tries to take advantage, if that is ever the case.

This effect is serious enough when produced by

Labour Union Perils.

individual action, but when it results from the collective action of unions whose power for good is degraded into a reign of terror, which instead of confining themselves to their legitimate and laudable task of securing a just return under fair conditions, encourage idleness and inefficiency by limiting either the training of workers or their output when at work, then Labour suffers terribly.[1] Doubly victimized by the misguided policy of his self-styled friends, whose volubility and speciousness blind him to the trap they set for his ignorance—too often, alas, themselves ignorant—the honest and capable worker, willing to do a good day's work for a good day's pay, is first of all prevented from reaping the deserved reward for his own ability and worth, and then a blow is dealt at his employers which incapacitates them, or at all events effectually prevents them

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[1] The tyranny which leads to this injurious abuse of labour unions, where it exists, is brought about by the fact that the inefficient and idle are always in a majority, and they are the ones who feel the pinch of bad conditions first. The better class of workers, usually in demand, are able to secure the best berths, and often do not join the unions of their own free will, or do not form a proportion large enough to shape their policy. In such cases the power consequently lies in the hands of those least capable of rightly wielding it, who are most interested in its abuse. Their aim is to level down instead of up, which alone can ultimately benefit labour. This is especially the case in the United States, where so large a proportion of the workers are undigested immigrants from Europe and Syria, easily influenced and readily cowed, but whose children, thanks to the schools, grow up valuable members of society.

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from acceding to the just demands of their employees.[1]

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[1] I cannot refrain from quoting here the far-seeing and dispassionate conclusions in this matter expressed by that great thinker Herbert Spencer, in his "Study of Sociology."

"When the heads of an association he has joined forbid a collier to work more than three days in the week—when he is limited to a certain 'get' in that space of time—when he dares not accept from his employer an increasing bonus for every day he works—when, as a reason for declining, he says that he should be made miserable by his comrades, and that even his wife would not be spoken to : it becomes clear that he and the rest have made for themselves a tyranny worse than the tyrannies complained of. Did he look at the facts apart from class-bias, the skilful artizan, who in a given time can do more than his fellows, but who dares not do it because he would be 'sent to Coventry' by them, and who consequently cannot reap the benefit of his superior powers, would see that he is thus aggressed upon by his fellows more seriously than by Acts of Parliament or combinations of capitalists.

"When an association of carpenters or engineers makes rules limiting the number of apprentices admitted, with the view of maintaining the rate of wages paid to its members—when it thus tacitly says to every applicant beyond the number allowed, 'Go and apprentice yourself elsewhere,' it is indirectly saying to all other bodies of artizans, 'You may have your wages lowered by increasing your numbers, but we will not.' And, when the other bodies of artizans severally do the like, the general result is that the incorporated workers of all orders say to the surplus sons of workers who want to find occupations, 'We will none of us let our masters employ you.' Thus each trade in its eagerness for self-protection is regardless of other trades, and sacrifices numbers among the rising generation of the artizan class.

"Nor is it thus only that the interest of each class of artizans is pursued to the detriment of the artizan class in general. The course taken by any one set of operatives to get higher wages, is taken regardless of the fact that an

Those who really seek the worker's welfare cannot afford to lose sight of the fact that the employer is always, by force of circumstances, the master, even in the most complete form of co-operation, and that after all it rests largely with him to decide the conditions of labour. While to obtain fair terms of hire and hours of work,—if only to prevent competition in prices at the expense of the workers, and to secure the absence of conditions prejudicial to health, —it may be necessary to combine and also to invoke Parliamentary action, any further demands must injure the Cause. There is naturally a limit to what employers can be compelled to grant, either by combination or legal enactments, for if Labour can grasp more than its fair share they will go out of business. Labour laws, however, unless of such a nature as to prevent competition with other countries where they do not exist,—in which case they can only be enforced along with some measure for excluding goods produced under worse conditions than they enforce,—are as much to the advantage of the just employer as to that of his workpeople, since they restrict unfair competition, and enable him to

eventual rise in the price of the commodity produced is a disadvantage to all other operatives. The class-bias, fostering the belief that the question in each case is entirely one between employer and employed, between capital and labour, shuts out the truth that the interests of all consumers are involved, and the immense majority of consumers belong to the working classes themselves. A strike which makes coals as dear again, affects in a relatively small degree the thousands of rich consumers, and is very keenly felt by the millions of poor consumers, to whom in winter the outlay for coal is a serious item of expenditure."

maintain those conditions of labour which alone can satisfy.

Honesty the only Policy.

There will always remain in prosperous concerns a margin wholly controlled by the management, with which it can never be forced to part, but which its ablest, furthest-sighted representatives can be induced to share with the workers, not as philanthropy, but as a business investment. This being so, it is evident that the greater the demands on that margin, the more closely it will be guarded; while a hostile attitude is fatal. A servile attitude on the part of Labour would be as foolish, and equally ineffective. The only key to the situation is the attitude of good-will which breeds good-will, of trust which engenders trust, and of honest dealing which commands honest dealing.

Let the workers of our land combine not only to obtain just terms and conditions, but to promote efficiency and whole-hearted work, as the old-time guilds did, or as the guilds of China do still, and they will be in a position to *command*, not *demand*, their full share of prosperity. They will then be able to assure to the fair employer an abundance of the very best labour in return for ideal conditions. Only in this way can Labour control Management, and with it Capital.

Attitudes of Employers to Labour Unions.

Under existing circumstances, in view of the hostile position assumed by many organizations of labour, it frequently becomes a serious question with employers what attitude to adopt towards those organizations. Three courses are open to them: (1) To ignore their existence as far as possible, but to treat them courteously when approached by them; (2) to encourage their men to organize, and to meet them on the footing they desire; (3) to refuse to employ union labour, or to deal with any organizations whatsoever. No doubt the majority of employers prefer the first course as far as practicable, paying the wages demanded, and doing no more than they are obliged for their workers, but prepared to stand and fight when too much is asked.

"N.C.R." Co.'s Experience.

The second and third courses are less common, and an American instance of each will prove instructive. That of the second is the experience of the National Cash Register Co.,[1] which encourages its men to join unions, relying on the peculiarly attractive conditions of labour at its factory, and the common sense of those fortunate enough to get work there, to preclude friction. Vain hope! So long as only its own employees were concerned all went well, but their membership of outside unions enabled those unions to stir up strife within. Although there was no direct advantage to be derived, or even a cause of complaint, and throughout the works union and non-union labour was engaged indiscriminately, the union workers in one department, that of the screw-makers, decided to demand the dismissal of their non-union comrades, and the formal recognition of their union. They struck, and for thirteen weeks remained out of work, but they gained their point, since which things have worked smoothly with them, for the price paid was out of all proportion to the result.

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[1] Another conspicuous American instance of this attitude is afforded by Mr. H. O. Nelson, of St. Louis, while Mr. George Thomson, of Huddersfield, has afforded an English example of an employer preferring to deal with unions rather than with individuals.

Three or four years afterwards, however, their victory tempted the polishers to try their strength in demanding the reinstatement of four of their number who had been discharged during the past eight months for incompetency or insubordination, whether there was work for them to do or not. This demand over-reached itself in its unreasonableness, and the management decided to maintain its right in a free country to engage and pay only those whose services it needed. All hands were notified that as each department was dependent on the others, and as no machines could be turned out till the polishers who had struck resumed work or were replaced, the works would be closed entirely that night till further notice. After six weeks they were re-opened at the request of the other departments, mostly worked by union labour, which acknowledged the polishers to be in the wrong, and agreed to their being replaced by non-union workers. The management offered to take back any of its former polishers but the four who had been dismissed, and later agreed with the labour leaders in Washington to replace a certain portion of the new non-union polishers by old union men, but this the local union refused to approve, so the department remains an open one. Otherwise nearly all the departments employ only union labour, except those in which all are girls (about 400), who have refused under the strongest pressure to join any union directed against their employers.

On the next occasion of interference by the unions it was to object that non-union labour (old women so engaged as an act of charity) should be employed to wash the towels, etc., provided free by the firm for its employees' comfort. This was settled by leaving them to wash their own towels.

Finally rumours were heard of another impending strike manœuvred from outside. A resolution had been passed by the local union of "assemblers" (men who put together machines made by other departments), to ask for a nine-hour day; but before it was put into effect the management called all the men together to talk it over. They were reminded that they were at present paid a ten-hours' wage for nine and a half hours' work, and were shown that even if only nine hours were worked and paid for it would be a loss to the firm, as requiring more men, machines, and space than could be at present accommodated. Then they were informed that in future they must do the ten hours' work for which they were paid, and that the limit of $3 a day placed on each man's earnings by the union must be removed, so that each might be encouraged to do his best; otherwise the factory would "shut down" that night. The employees subsequently accepted both points, and work was at once resumed, since which the experience has not tempted them to fresh trials of strength.

Subsequently a Labour Bureau was constituted by the firm among its employees to represent all parties in dealing with such questions, and an interesting commentary on the experiences related is that the chairman of the Bureau when the writer visited the factory, then the manager of the "Making Force," had been the foreman of the screw-makers who led them in the original strike. Now no union members are appointed foremen except in the printing department, as the superior intelligence of the printers keeps their union clear of the tyranny and aggression which mark so many others, and secures them excellent management.

The irony of such strikes in connection with a management so manifestly desirous of sharing its prosperity with every contributor lies not only in the fact that such action would suffice to blunt the goodwill of any but so earnest a friend of labour as Mr. Patterson, the head of the concern, but also in the fact that in the first three cases action resulted solely from an outside tyranny over the strikers, who had all to lose and nothing to gain. In the one point where they might have scored by a more reasonable line of action than that of threatening a friend, they were hopelessly defeated on their own ground. In view of the possibility of such occurrences, it is small wonder that a growing number of firms adopt the third course indicated, and refuse to employ union labour, or to deal with any organization.

An Anti-Union Experience.

An instance of this plan is afforded by the Brown Hoisting Machinery Co., which employs some 1,400 men at its works in Cleveland, and an indefinite number on contract jobs throughout the country. To every applicant for work the following printed notice is furnished:—

"The Brown Hoisting Machinery Company does not wish any one in its employ who does not fully understand and approve of its general policy and methods. In order that every applicant may fully understand the Company's general policy and methods with respect to its employees, it makes the following statement:—

"I. For the purpose of encouraging each man in the Company's service to utilize his best abilities, the Company does not have any fixed or uniform scale of wages for each different class of work, but arranges with each individual on his employment for the rate of wages he is to receive to begin with, and his pay will be determined from time to time, according to what the Company deems his services are worth to it, in the work he has to do. Notice of any reduction in the rate of wages or pay of an employee will be given before such reduction goes into effect.

"II. Each employee is engaged in his individual capacity only, and in all his relations with the Company he will be treated accordingly, and any and all complaints or grievances must be brought by him first to his Foreman, and if not satisfactorily adjusted by the Foreman, then to the Superintendent, and after that to the Manager. Any organization or body of men in the shop, or shop committees of any kind, will not be recognized as such, or permitted.

"III. Unless otherwise specially agreed, each man will be engaged to work by the hour, and his rate of wages will be by the hour. All Company work necessarily done on Sundays, Washington's Birthday, Fourth of July, Decoration Day, Labor Day, Thanksgiving, New Year's Day, and Christmas, will be paid for at the rate of one and a half hour for each hour worked, and all work at the Company's shops over ten hours in any one day, except the days mentioned above, will be paid for at the rate of one and one half hour for each hour worked. Until further notice the regular hours for work will be from 6.30 to 11.30 a.m., and 12.00 m. to 5.00 p.m.

"IV. So far as practicable, employees at the shop will be paid on the 5th and 20th of each month. Whenever either of these dates is on Sunday or a legal holiday, pay day will be on the nearest previous working day.

"V. When deemed best by the Company for any reason to dispense with the services of any employee, it reserves the right to do so, and without the necessity of assigning reasons therefor: and, on the other hand, any employee may leave the service of the Company at any time he sees fit."

There is something crisp in these regulations, which cannot certainly be considered unfair, and their enforcement is rigid. The ten-hour day was adopted by the unanimous vote of the men, those on night work putting in eleven hours five nights a week. Each man soon learns by experience that good work will secure adequate recognition, for which not one per cent. needs to apply, with the result that Mr. Brown has attracted a magnificent set of men, prepared to stand by their firm at all hazards, even when a regiment of soldiers has to be called out to protect them from union attacks. Thus, when performing a large contract at the Brooklyn Navy Yard, all the workmen were brought from Cleveland and lived in a ship moored close by for the purpose, as they never dared to leave the yard: and when working on the New York Central Railway they had to live in a guarded camp.

Enough has now been said as to the relations of employers to labour unions, the correlatives of capitalist trusts, and equally liable to abuse, which, if unchecked, will in either case ere long necessitate drastic legislation. One word needs to be added as to the large proportion of union members in the United States, estimated by some as high as ninety per cent., who only join under compulsion, because they dare not stand alone, or would be starved by their comrades if they did. Surely this is replacing one inexcusable tyranny by another, which must sooner or later bring about the ruin of the unions, and the defeat of their ostensible objects. The moment they substitute terrorism over the weak for the attractive power of free men bound together for the common good, that moment they have cut away their mast. This point must be generally realized by the workers if ever their unions are to bring about the ideal conditions of labour before us. Hostility to master and tyranny to man must alike disappear, if the objects common to both are to be obtained. Only then will enlightened employers be able to do their best for their employees, or *vice versâ*, and nothing else will satisfy both.

Danger of Union Tyranny.

As a means to this end it is important to afford the worker every encouragement to take an intelligent interest in his or her work, and to assure them of due reward for so doing. In England especially, where length of service is so often considered to give a prior claim to advancement over merit, we have much to learn in this respect from America, where merit is the prime essential. Many an English business is

Efficiency Essential.

blocked by inefficients, who, having no inducement to move elsewhere, have just stayed on, putting up with any conditions which secured a competency, till at length their immobility is rewarded by promotion to positions in which they act as a drag on development. The younger country may often make the mistakes inherent to youth, in rashness, in trusting too much to the untried, but it does move, and it behoves us, if we do not mean to be outstripped, to encourage efficiency more than we do. The Sherwin-Williams Co. has adopted an ingenious system of crediting every one employed in each department, from manager to sweeper, with a certain number of "points" for profitable working during the year; all in the department or establishment reaching the "top-notch" receiving a bonus of from £100 down, and a little gold badge inscribed "T. N." ("top notch"), which they have a right to wear for twelve months. All are thus made in earnest about the success of the business, so that it must succeed.

Faithful Service.

Faithful service will not lack encouragement, for the most faithful are the actively zealous, not the most limpet-like, and in the long run the system of basing promotion on merit alone will secure for the faithful servant the best position for which he is fitted. Many firms not only promote worth, but recognize long service in special ways. The Van Marken Companies present with great display a silver cross at the end of twelve and a half years' service, and a gold cross after twenty-five years, both returnable at death, together with a gorgeous certificate to be retained by the family. In 1900 no less than nineteen of their employees wore gold medals, and 159 silver. Messrs. Villeroy and Boch present outright a twenty-five years' silver medal and a fifty years' gold one. The Sherwin-Williams Co. presents gold watches after twenty-five years in its service. Messrs. Crosfield and Sons pay £5 in cash after twenty-five years, and £20 after fifty years. Messrs. Menier grant extra annual pay for steady service, the rates for men being after six years £2 8s., after ten years £4, after fifteen years £6, after twenty years £8; and those for women half as much. A large proportion of both sexes, to judge from their appearance, must have qualified for the higher rates.

The Badische Anilin- und Soda-Fabrik awards £1 for each five years' service up to twenty years, including that spent on military duty. Although its works were opened only forty years ago with thirty workmen, at the end of 1903 there were 77 counting over thirty years' service, 148 over twenty-five years, and 395 over twenty years. The Carl Zeiss Stiftung grants all employed three years six months' salary in lieu of notice, together with a quarter of the pension to which their length of service entitles them, or proportionately less for less than three years. In 1903 sixty workmen thus dismissed received £1,500.

M. Dufayel, of the great Paris furnishing establishment, presents his employees annually with a furnished country house, furniture, bonds and bank-notes, which are distributed by lot, only those a certain number of years in his service being qualified to draw the highest prizes. Girls married from the business receive their trousseau, with £4 for every year they have been in it, and £3 on the birth of each child. The wives of his employees are offered £2 a month for six months towards the cost of a nurse for each child.

It must have been an impressive moment when, on a recent occasion, Mr. Heinz, of Pittsburg, summoned the whole of his employees to the vast auditorium in his factory to honour three old ladies whom he had to introduce to them as his three original "girls," when he started work in a small way many years before. The occasion was described by Mr. Heinz as the fulfilment of one of the dreams of his life. The aged and honoured guests of the day—in their seventy-seventh and eightieth years, respectively—had been his assistants when in 1869 he had set up in business with the use of three-fourths of an acre in his father's brick-field, and some experience of vegetable gardening as capital. Truly, as "The 57" reports it, this was "a scene which could have been witnessed in no factory where only head and hands work, and heart remains at home."

Premiums on Efficiency.

The Van Marken system of recognizing merit goes further than the loan of medals, however, and is probably unique. Every employee receives premiums in addition to his regular average wage in proportion to the good qualities displayed. Thus an addition of from two to twenty per cent. is paid in recognition of special skill, according to which of the five classes the worker has reached (the normal wage alone being received in the lowest) a second like premium is obtainable on promotion to similar classes according to zeal and efficiency (1, insufficient; 2, medium; 3, good; 4, very good; 5, excellent). Every one begins in class 1, out of which he must pass during the first year or leave the factory; the second year must see him through the second, after which, in the lower grades, no more is demanded of him, but in the higher he must continue improving, overseers and clerks having to reach the fourth class in three years, and engineers and all above them the fifth class in four years. Any one promoted to a new rank falls back a class till he has shown himself adept in his new duties.

The promotion from class to class is based upon reports of all in authority on the work of those under their orders; these are embodied in reports from the heads of each department to the directorate, which exercises its own discretion in making awards. An additional premium of five or ten per cent. is awarded for evidences of good-fellowship and co-operation, thus encouraging those whose behaviour conduces to the smooth working of the concern. Finally, rewards are given for exceptional merit, such as suggesting improvements, or prompt action in emergency. "Nevertheless," says Mr. Van Marken, "the directorate is not a partizan of the system of rewards: it prefers to accord rights rather than grant favours."

Basis of Wages.

The principle of the average normal wage adopted by the Van Marken firms as a basis is also probably unique, and needs explanation. Recognizing the fact that the average expenses of the household remain, or should remain, the same week by week, while wages arising

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from piece-work, irregular hours, and contract jobs vary considerably, a careful calculation from past records enables an average weekly amount to be arrived at in each case. This is fixed on at the beginning of the year, and at the end of every quarter the accounts are made up, when each workman receives the balance due to him, chiefly from premiums earned, which comes in most conveniently for rent and other periodical charges. Besides this the company pays a life insurance premium for every workman.

Messrs. Cadbury Bros., instead of basing their piece-work rates on the output of the most rapid workers, as is commonly the case, base it on the average output, as experience shows that only about five per cent. have that natural aptitude which enables them to do the most. Then again these rates are calculated to ensure the ordinary worker more than a bare "living wage," which in the case of girls is reckoned locally at from 12s. a week, while the basis on which the rates are calculated is 16s. The living wage for a young married man in the locality is reckoned as 24s. Finally, when a woman has been twenty years in the service of the firm, an additional monthly allowance is made, increased after twenty-five years' service, to compensate for a probable falling-off in her output, and to enable her, although a little slower in her work, to earn the same wages..

The Carl Zeiss Concern, which is practically a co-operative productive organization—governed not by a Board elected by the workers, but by a " Stiftung," or Foundation Trust, including a paid nominee of the Government, under elaborate statutes carefully drawn up by the founder—has also a unique wage system. For piece-workers the minimum wage is calculated on a time basis, but all wages paid are treated as consisting of two components, (*a*) a fixed irreducible amount, and (*b*) a variable amount dependent on the year's profits. This latter is not regarded as profit-sharing, but as an essential portion of the earnings. When a certain total has been reached and drawn for a year it cannot be reduced, even if work is slack, though, on account of the compensation to be paid, discharge is seldom practicable.

Yet even such liberal terms as this cannot always satisfy, as though between 1896 and 1902 the additional amount (*b*) averaged 9 per cent., or about an extra month's pay each year, in 1903, owing to the piece rates having been fixed too high, there was nothing to divide under this head, and grumbling ensued. No salaries, even those of the directors, may be more than ten times the average earnings of workers of twenty-four after three years' service—about £90—and members of the Board are excluded from the additional payment on account of profits enjoyed by every one else, lest in settling the prices for piece-work, etc., they might be tempted to lower them in order to increase the shareable margin. Exceptional activity and valuable suggestions are rewarded by voting individual honorariums.

Several other methods of encouraging diligence and speed in workmanship have been devised and adopted in this country and abroad, but as most of them are applicable only to some particular class of manufacture, it would be impossible here to enter at any length into their details. Their principles may, however, be briefly indicated, and their application left to those concerned. Probably the simplest of all is the direct weekly or quarterly bonus, awarded to each as the result of the personal observation of the master or his immediate assistants. Such a scheme contributed not a little to the success in business of the writer's grandfather, Samuel Budgett, whose passing reminder to a man whose work was observed to be slack, "Remember the Gothic door!" referred to his custom of handing little packets of coin to all whose diligence had attracted his attention, and to others a lesser sum eked out by a warning word, as they passed out on a Friday afternoon with their wages. "That palm-grove," say the Arabs, "cannot flourish which hears not daily the voice of its master."

Another principle which the "Successful Merchant" employed with admirable results was to determine that each day's work should be done in the day, and that every order received should be executed before any were allowed to leave the premises. Thus all were interested in the prompt despatch of orders, and assistance was willingly rendered by one to another. But neither of these methods, admirable in a business of small dimensions, and to a large degree responsible for the phenomenal development of this particular instance, would be equally workable in the great concerns which afford most industrial problems. Something has still to be devised which shall as effectively promote efficiency and zeal, and produce as harmonious relations and satisfactory results when each department is a wholesale business in itself.

Piece-work Premiums.

In factories employing piece-work one of the most successful methods has been to fix a time-limit for each job, and offer the workmen an increasing percentage of pay in proportion as he reduces the time employed. Thus under the "premium system" a man earning 9d. an hour, when placed on a repetition job, the time-limit of which has been fixed at a working day of eight hours, would receive under ordinary circumstances his normal wage of 6s. a day. Should he dawdle or work short time, he is by so much the loser, but should he by method and concentration succeed in doing the job in six hours, and the proportion of time saved to be credited to him is a third, he will receive that proportion of 1s. 6d. (two hours at 9d.), *i.e.*, 6d. extra, or 6s. 6d. the job, as well as having two hours left wherein to do the third of another job at the same price, worth 2s. 2d., which brings his day's earnings up to 8s. 8d. By this method, while the worker earns more, better use is made of the machinery, space, management, and other occasions of fixed charges, a saving being effected which ultimately reduces the cost of production, and thus increases the demand.

The same result is achieved by paying the workman the percentage on his wages by which he saves time on his job. Thus if a hundred hours, at 8d. an hour, allowed for specified work, be reduced by increasing skill and attention to seventy-five hours—a saving of 25 per cent.—the workman's wage for the hours worked will be increased that percentage, *i.e.*, 2d., making his hourly wage 10d. His earnings on the job will thus be 750 pence for time in which he would otherwise have earned but 600, while the employer is saved 50 pence on the cost of each job.

Instead of basing their premiums on piece-work, some firms, as, for example, Messrs. Crosfield of Warrington, find it more satisfactory to divide with their employees the saving effected by reducing the cost in wages per ton produced, allotting them from 50 per cent. to the whole, such payments being entirely voluntary, and not claimable as a matter of right. This calculation is made weekly in each department, and good work and reduction in waste are also taken into account in fixing the proportion of the saving to be allotted to the workers, who thus reap a direct advantage of their own diligence, often an addition of 20 or 25 per cent. to their stipulated wages, notwithstanding that the cost of production has been reduced and the work not scamped.

A still more direct bonus system is in force in Messrs. Tate's sugar furnaces in Liverpool, which effectively promotes economy in stoking. A weekly bonus is paid according to the proportion of carbon dioxide in the gases emitted, with a deduction for each degree in the proportion of coke produced above a standard dependent on the quality of coal used. An excessive production of black smoke involves forfeiture of bonus. The John B. Stetson Co., of Philadelphia—felt hat makers employing 2,400—in order to correct the irregularity of piece-work in their sizing department, where most of the men are foreigners of a roving disposition, offered a bonus of 5 per cent. each Christmas on the year's earnings of each, with such results that this was successively increased to 10 per cent., 15 per cent., and 20 per cent., now gained by 92 per cent. of the workers.

The Thames Iron Works at Canning Town introduced a plan of premiums for time saved, which they call their "Good Fellowship" system, twelve years ago, in conjunction with an eight hours' day, with very satisfactory results. During those years upwards of £86,000 have been paid to their men in premiums, yet the firm has profited also. Messrs. J. & E. Hall, Ltd., of the Dartford Iron Works (500 men), have more recently introduced such a system in place of a profit-sharing one in which the idle benefited with the diligent, and the bonuses seemed to many too far off to produce the required stimulus. "Our object," they say in a notice to their men, "has been to make it worth our workmen's while to do their level best without requiring the constant supervision of their foremen; the foremen's attention can then be devoted, as it should be, to improved methods of production and other economies from which we all benefit."

Value of Suggestions.

If such results are to be attained, it is essential not only to encourage better use of the muscles, but also better use of the brain of the workers, by inviting and rewarding practical suggestions for improving methods. Hitherto it has been too much the practice to snub a man who would "teach his betters," and many an ingenious fellow whose advice would have been invaluable had it been welcomed, has had either to take his ideas to rival firms, or make no use of them at all. Yet who is in a better position to devise labour-saving and economical methods than the men engaged in the operations concerned? This is now becoming widely recognized, so that in the best workshops and warehouses suggestions are invited and amply rewarded.

Messrs. Cadbury invite suggestions from their workpeople concerning—

"1. The comfort, safety, or health of employees.
2. Means by which waste of materials may be prevented.
3. Saving of time and expense.
4. Improvements in machinery.
5. Introduction of new goods or new ideas.
6. Existing defects.
7. The athletic and other clubs and societies, libraries, magazines, etc.
8. Anything not included in the above list."

Suggestions have to be written on, or attached to, numbered forms provided at locked boxes in which they are to be placed for the weekly consideration of the suggestion committee with a member of the firm. The numbers of the forms received are posted weekly, but the names are kept private except in case of prize-winners, who are duly honoured half-yearly. The prizes consist each time of sixty in the men's departments, ranging from 5s. to £10, and fifty-six in the girls' departments, ranging from 5s. to £5. This system has produced a most marvellous crop of ideas, most of them of some value, many of great value.

Messrs. Rowntree have adopted a kindred method, but a copy of each suggestion is sent without the author's name to the head of the department concerned for a report. Prizes of 2s. 6d. to £1 are adjudicated by the directors monthly for every suggestion adopted, with additional prizes of £2, £3, and £5 each half-year for the best during the six months, as shown by their working on adoption. Messrs. J. & E. Hall have a suggestion box at the gate which is opened daily by a director; they announce that "no worthy suggestion will be unrewarded," especially emphasizing the value of labour-saving devices in frequent use. Messrs. Lever Bros. and other firms have suggestion boxes and annual prize distributions which provide an admirable stimulus. Messrs. Crosfield leave the consideration and recommendation of suggestions as to the improvement of their surroundings to a Workmen's Council, which does not, however, concern itself with the terms of labour. Members of this Council have paid visits to other firms to see what social work they were doing. Messrs. Burroughs and Wellcome award 5s. for each suggestion adopted, adding prizes of 10s. to £3 each quarter for the best, with special recognition of anything of particular value.

In America this plan of co-operation is much more generally employed. Two Detroit firms have adopted it with success, the Acme White Lead Works and the Farrand Organ Co.; and elsewhere such concerns as the Filene Stores, which give for minor suggestions 2s. each, and 4s. each week for the best; the Bausch and Lomb Optical Co., of Rochester, which offers seven prizes quarterly of £1 to £5, and £20 annually for the best suggestion of all; Mr.

F. A. Brownell (photographic apparatus) of the same city, who offers eight prizes monthly of £1 to £5, and three prizes annually of £4 to £10, publishing a monthly "Prize Awards Bulletin"; the Cincinnati Milling Machine Co., which offers £50 each half-year in prizes, and undertakes to pay the actual value of any suggestion adopted but not entitled to a prize; and the National Cash Register Co. which distributes in this manner £500 a year in educational trips as far as Boston, New York, etc., the first prize being a £40 trip. This scheme in one of its earlier years brought them four thousand suggestions of which

COMPLAINTS AND SUGGESTIONS

"N.C.R." WORKMAN USING SUGGESTION REGISTER.

over a fourth were adopted, but the number has naturally decreased each year since. Yet in October, 1904, no less than eighty suggestions were adopted in the making department alone, many of which incurred the taking out of patents. Of these there are over a thousand on the present machines, as many as 145 having been granted in one day last year—all the outcome of suggestions. This Company has placed on the market the excellent "autograph duplicating machines" for complaints and suggestions which they make for their own use.

Among other American firms offering rewards without a definite prize system are the International Harvester Co.; the Platt Iron Works Co. (engineers), of Dayton; the Edison Illuminating Co., of New York; the Remington-Sholes (typewriter) Co., of Chicago; the United States Printing Co., of Cincinnati; the J. C. Ayer Co. (manufacturing chemists), of Lowell, Massachusetts; and the A. B. Chase Co. (pianoforte makers), of Norwalk, Ohio. The Cleveland Hardware Co. at one time "put small boxes through the factory, asking the employees to drop in any suggestions . . . and at the end of six months giving a prize for the best," but after the first trial the scheme waned and was abandoned in favour of a promise to pay cash for all improvements of value suggested. Messrs. Chandler and Taylor (saw-mills), of Indianapolis, also abandoned a prize scheme, because they found the best men would not compete, considering a prize inadequate when great saving was effected, and preferred to make suggestions privately. This is all very well when possible, but the prize scheme serves the double purpose of stimulating the hitherto thoughtless, and of providing minor ideas : it is never complete without the added assurance that anything beyond prize value will be adequately remunerated. In any case the leading prize-winners are sure to find themselves additionally rewarded by promotion, if not directly so. Messrs. Cadbury do not offer their prizes to foremen and forewomen, dealing with their suggestions individually, and consulting personally with them as far as possible, so that a general *esprit de corps* is promoted.

Business Conventions.

The distribution of rewards is usually made by progressive firms an occasion for gathering all grades and all departments, often including salesmen and outside office staff, in a great social "convention," where an opportunity is afforded of fraternizing and coming into friendly relations with one another. This is very different from the regulation "bean-feast," "wayzegoose," or excursion, in which one class goes off by itself "on the spree," too often with disastrous results. It is a business assembly in which the social element for once predominates, and all agree to enjoy themselves while considering how to promote the common interest. Meetings at which practical papers are read or speeches delivered concerning the business and those by whose efforts it is created, followed by free discussion, are interspersed with social functions open to both sexes, so that it becomes in very deed "a family affair," and the wives and daughters grow as enthusiastic as their men folk, storing up a reserve

DISTRICT CONVENTION OF NATIONAL CASH REGISTER SALES AGENTS.

to help them out of their next fit of "the blues." Such a practice cannot be too strongly recommended.

Workmen in Authority.

All this is conducive to that co-operation and absence of friction between labour and management which is so essential to success, but it is not in itself enough. The ultimate object of all education and technical training of workers must be to fit them to take their share in the actual management, so that the two are no longer divided, even in name. To this end Factory Committees and Workmen's Councils are being introduced to serve as a means first of intercommunication, and finally of control. Ere long, indeed, there is every reason to expect that the actual management of great businesses will pass from the overburdened hands of a limited Board, which can be at best but imperfectly acquainted with its details, to the more practical hands of the workers themselves, responsibility being distributed from the head downwards.[1]

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[1] "In Britain the healthy, fresh-faced man is usually the employer, and the weary, sad-eyed man is the employee. In America the employee is filled with frolic. It is the employer who is tired: just tired, just worn out, just living to work, racked with worry, as many a man confesses." So says Mr. Foster Fraser in *America at Work*. But it is a mistake to suppose that in America more business is done in a given time because of the manifest "hustling" and appearance of haste. An American will often decide on a course of action and set to work before the more cautious inhabitant of the Old World has thoroughly weighed pros and cons, most of which he has never considered; but, once at work, promptitude in the regular despatch of business lies with the English, as any one who has had dealings with both is aware. The American

This has already been accomplished in at least one instance, that of the National Cash Register Co., the organization of which is so complete that the continued presence of the "heads" is no longer essential to the working of the factory. Thus, on the occasion of a reception at the president's home, which he was that day making over to his employees as a pleasure resort, the following report in the local press was possible:—

RECEPTION OF "N.C.R." EMPLOYEES AT THE PRESIDENT'S HOME.

"Another remarkable feature of the day was that from 3 o'clock in the afternoon until 5.30 every person in authority at the factory attended a reception at 'Far Hills,' leaving the factory entirely in the hands of men without a boss to keep an eye on them. The factory ran along just the same as though all the foremen and the heads of departments were there, and thus proved that the wonderful system at the N. C. R. Works is just what is claimed for it, 'automatic.'"

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sits in his shirt-sleeves and talks, making up for lost time by machinery and labour-saving devices, while without them his cousin plods on and does work that lasts.

The "N.C.R." Committee System.

In the words of one of the company's publications: "The entire business is conducted under the direction of the president, vice-president, and general manager, by a series of committees. For the business departments there is the executive committee, composed of nine members, with the general manager of the company as chairman and executive officer, under whom is the direction of the general policy of the business and the conduct of its affairs. The working department is controlled by a factory committee of five experts in various lines of factory work, each of whom acts as chairman in turn. This committee meets regularly for general consultation. The duties are such as are generally assigned to a superintendent and his assistants. There are, besides, an invention committee, the office committee, and other similar groups having special duties to perform. The selling force is under the immediate supervision of fifteen district managers, who are responsible to the manager of agencies. They meet at the factory every few months. Each of these committees and divisions has its special work, and makes its decisions independently. Important matters may be carried from the lower to the higher for decision. Only matters of the greatest importance are referred to the president and vice-president, so that a large portion of their time may be devoted to the study of methods for enlarging and extending the business." In the various committees, to quote a former officer of the company:—

"Discussion is brief. The data, opinions, and suggestions of different members are quickly given. These men are trained to cut out verbiage—to get to the point—to tear out the kernel of a question and throw the useless shell away. And the chairman is trained to keep his committee under control, to prevent digression, and get down to hard pan ; to get conclusions, results.

"Such a system makes quick action possible. When a manager has to solve an important problem, instead of carrying the matter around under his own hat, and trying to work it out in his own mind during a week or two, or longer—meanwhile postponing all action—he brings it up at the next meeting of his general committee. In five minutes he has gathered evidence that he could not think up alone in a week. Sometimes the question is decided at once : sometimes laid over for further consideration. But it has repeatedly happened that questions have come up for consideration for the first time, been thoroughly sifted, and finally decided, and orders issued for action, all in the space of a single hour. Usually their conclusion is expressed in a vote. But the orders are all issued by the manager of the 'pyramid.' He may or may not adopt the conclusions of the committee. The authority and responsibility for final action are both his and his alone.

"The committee system enables the company to concentrate upon every important question the best brains, judgment, and experience of the organization, and to do this regularly and systematically. Often a discussion—the play of half a dozen minds against each other—will bring out ideas, suggestions, expedients, which otherwise would never occur to any one. When you focus six able minds on any question, you are far more sure of burning a hole in it than when you have only one mind at work.

"For twenty years men all over the world have been trying to make cash registers to beat those of the National Company. But no inventor has been able to turn out a register to equal those that have been brought into existence by the efforts of its ceaselessly active Future Demands and Improvements Committee.

"Every manufacturing organization could profit by the formation of such a committee. The work of foreseeing demands, of keeping abreast of and ahead of them, should not be left to chance. It should be done regularly and thoroughly. It should be reduced to a system.

"Another advantage of the National committee system is the training that it gives. Every business needs good men. This system makes the best men. The short, terse discussions draw out the members of the committee, develop their powers of observation, thought, and expression, broaden their knowledge of the business. They learn facts from each other: they whet their interest and ambition on each other: they develop their judgment by their daily consultations and decisions. As a result the company has a number of broadly trained men on whom it could quickly draw to fill its highest positions in case of vacancies.

"The working head of the company is the general manager. Under him are three sub-managers, one at

Distribution of Responsibility.

the head of each of the three main divisions of the company — the factory, selling, and general office forces. The president and vice-president of the company, who are also its majority stock-holders, hold these four men personally and directly responsible for the conduct and success of the organization down to the last detail. If an accident occurs in the engine-room, the fact that there was carelessness there is held to reflect not only on the chief engineer, but on every factory officer above his head, including the manager of the factory. If the shipping department gets behind in its work, its supervisor and the manager of its division receive criticism as well as the head of the shipping department himself. If sales fall off in the State of Oregon, the manager of the selling force is held to be at fault until the unsatisfactory condition is remedied by his subordinate, the selling manager of the fifteenth sales district, of which the Oregon territory is a part.

"No officer in the company's employ is ever allowed to dodge the responsibility of misconduct or failure on the part of a man below him. He is supposed to see that as long as that man is employed, he is so supervised that he cannot go wrong, or fail to achieve satisfactory results. He is supposed to shoulder the responsibility for the work of every man under him, and to keep all subordinates constantly 'jacked up' to a high standard of efficiency.

"All business organizations hold this theory after a fashion. But in the National organization the theory has been made a strenuous reality. Repeatedly officers have been discharged for the misconduct or inefficiency of their subordinates, along with the offending subordinates. That lesson has been thoroughly taught. It is a necessary one.

"If the encouragement of individual effort is the first great cause of the National Company's success, team work secured by close supervision, by individual responsibility, and by the committee system, is the second."

Other American Experience.

A most valuable opinion in this matter was expressed to the writer by Mr. E. A. Filene, of Boston, head of what has by a somewhat similar system been raised in fourteen years from an insignificant retail business to one of the largest women's and children's supply stores in the United States—a growth due "to the development of personal interest, and to the absence of personal friction." "We have come by slow stages to believe from experience what some held theoretically at the outset, that it is safe to entrust any amount of authority to the employees. Our Board of Arbitration is found to act fairly and with a better insight into details than is possible to us. I believe that even the wages question could be left to them: even that if entrusted to a secretly elected Board, this would be too conservative rather than too radical. This is the usual effect of putting workmen called radicals into authority."

Development of business began in this case with the introduction of such ideal conditions of labour as have been described in these pages, but with the common mistake of making them too "paternalistic," the management being entirely in the hands of the firm. The lunch-room, for instance, started well under such auspices, but soon the best paid men ceased to avail themselves of it, and the others, getting to regard it as a charitable institution, also dropped off by degrees, till it failed altogether. Then a new plan was tried, the lunch-room was handed over to an employees' committee, which worked so well—since grumbling could always be met by a new election—that in time not only the social work, but business operations, were placed on the same footing.

"N.C.R." OFFICERS' CLUB AT LUNCH.

The introduction of this system in the workrooms was soon followed by its introduction in the management, with the excellent results described. One outcome of this movement is that all the members and employees of the firm (about 500, a third of them men) are banded together in a Co-operative Society, the constitution and regulations of which are constantly modified as experience demands, but the upshot of which promises to be the conversion of the whole business into a co-operative partnership.

The business management of the Acme White Lead Works is also in the hands of committees, the Central Committee, composed of the heads of departments, practically forming a Board of Directors. The details of working are controlled by a Factory Committee, composed of foremen, etc., and everything that can be is devolved on that body. The Platt Iron Works Company some years ago, in place of the superintendent or manager, adopted the Factory Committee, consisting of the officers of the company and the heads of departments, who meet daily. In a smaller firm of paper box makers, Messrs. Packard and Sons, such a committee consists of the foremen and a member of the firm : the Curtis Publishing Company, of Philadelphia, the Farrand-Votey Organ Company and the Sanborn Company, both of Omaha, have also adopted this system, together with an increasing number of converts. In the Weston Electrical Instrument works the heads of departments form a "cabinet" or executive staff of twenty-five, one of whose duties is to dine together on the premises, that they may freely discuss business matters.

Continental Workmen's Councils.

Although not yet as far advanced in this direction as the instances quoted, the Continent of Europe contributes numerous important examples of firms which have for years past most successfully applied the principle up to a certain point. Most of their factory committees are concerned only with the control of savings, social arrangements and order, but the further development of the workers as a better educated generation takes its turn, will assuredly secure to them a share in the management as well. Among the cases quoted by Prof. Gilman one of the most encouraging is that of Messrs. Peters, of Neviges, near Elberfeld, in Germany, alpaca, worsted, and silk manufacturers, employing 500 hands, whose "Arbeiterausschuss" or "Aeltesten Rath" (Workers' Union or Elders' Council) has gradually developed from that placed in charge of the relief fund established over forty years ago. It consists of a member of the firm, who presides, but does not vote, and eight members over thirty years of age and ten years in the service of the mill, half chosen by the firm, and half by their fellow-workers. In addition to its control of the fund providing for cases of distress or misfortune, this council "oversees the moral conduct of the young, and incites them to self-education in their leisure hours; combats rudeness and drunkenness, helps in the faithful observance of the rules of the factory, and seeks to prevent carelessness and waste; is consulted by the firm regarding changes in the rules, rates of wages or hours of labour, protection from danger, and improvements in the quality or increase in the quantity of the products." From his experience of its working Herr Peters heartily commends this institution to others.

In the weaving mills of Herr Brandts at München Gladbach the Workmen's Council (formed in 1873) consists of the president of the sick fund, four representatives of the firm, and four workpeople, men or women. "It can call to its aid special representatives of different departments of the factory." In addition to superintending the social interests of the workers—including the dismissal of the incompetent or immoral—it endeavours to settle all difficulties before they become formidable. One of its regulations is that the wages of young people shall be paid to their parents. In the Schlierbach earthenware factory (400) the "Elders' Council" consists of a central body, with sections for each department, and its orders must be approved by the head of the firm, who can modify them or send them back for amendment.

In the Hamburg-Berlin Venetian Blind Factory the Workmen's Council formed in 1884 consists of four nominees of the firm and eleven nominees of the workmen, who number from one hundred to one hundred and twenty. The meetings are open to all workmen as audience, save when under the last "order of the day" all are invited to make known any wishes or complaints. Changes in factory rules or the business generally have to be approved by this Council, which in 1890 decided against an eight-hour day as impracticable, but accepted the firm's offer of a nine-hour day without reduction in wages. Next year, however, the eight-hour day was successfully introduced without reduction. "The novelty of this institution" (the Council), says Herr Freen, the director, "will doubtless offer some difficulties at first, but these are not to be compared with the advantage: from my own experience I can emphatically advocate the legal introduction of Workmen's Councils."

In the machine and waggon works of Herr Ringhofer at Smichof, near Prague (1,000 employees), the Council is composed of the six directors of the sick fund—elected by the members for three years—under the presidency of the head of the firm or his representative, whose approval is necessary. It decides what workmen are to be "laid off" when work is slack, and superintends the "welfare" institutions generally, of which it makes two reports at least yearly, which are distributed at the expense of the firm. In the Workmen's Council of the Marienhütte Iron Works, near Kotzenau, established in 1874, the proprietors are not even represented, all members being elected by the workmen. In addition to the usual functions of such bodies, this one decides what marriages may be permitted with wisdom, and in the course of many years there has been but one case of a recalcitrant, who was promptly dismissed.

The Van Marken Works possess a Workmen's Council which dates from the time when there were only five clerks and three workmen to meet. Subsequently equal numbers of clerks and workmen were balloted for, but now the Council consists of three committees:—

(*a*) The heads of departments, meeting quarterly.

(*b*) The clerks and foremen (the two seniors and six elected members), meeting bi-monthly.

(*c*) The workmen (the four seniors and twelve elected members), meeting monthly.

A united half-yearly meeting is presided over by a director, and is entrusted with decisions affecting the staff. Otherwise the duties of the committees are purely advisory, but of no less importance for that.

In France the Works Council at the Harmel Mills, dating from 1885, consists of eleven workmen representing each department or speciality of manufacture; no foremen are admitted. It meets fortnightly, with a director in the chair; and quarterly at the managing director's house, to which are invited at the same time technical experts and others qualified to assist in their deliberations. It is assisted in its work by the concurrence of a "Women's Workshop Council." The regular duties of the general Council consist in dealing with:—

1. The terms of compensation to be awarded in cases of accident.

2. Sanitary conditions, including heating or cooling apparatus.

3. Apprenticeship, to secure an all-round training which all, including the sons of the directors, have to undergo till certified adept by the Council.

4. Hours of work and intervals.

5. Wages and premiums, with a view to securing a living wage and rewards for good work; including the award of special supplements to meet exceptional circumstances, such as invalids or other extra depend-

MEMBERS OF THE WORKS COUNCIL AT THE HARMEL MILLS.

ants, which are revised at every meeting; and the determination as to the age of retirement.

6. Complaints, claims, and disputes.

This institution developed out of a "syndicate" or society formed in 1884, first among the proprietors and workers, subsequently among the latter alone, "to watch over the professional and economic interests of the workers." In addition to "welfare work" generally, this society has charge of a mutual pension fund for those employed over 25 years, the contributions to which are 2s. 6d. per year per family, and about three times as much from the firm, together with the profits of the bar. Special provision is made to secure full pay during stoppages of the works, as after a fire or during a wool crisis, other temporary work being found when practicable.

This continuity of employment is of far greater importance than most who do not depend on a weekly wage imagine, and no worker does his or her best unless free from anxiety on this head. The disastrous effects of casual labour at the docks affords an illustration of the evils of uncertainty, demoralizing and degrading. Employers who perceive the advantage of high-class labour are therefore compelled to plan continuous work of some sort, for their own good, as well as that of their employees.

The Maison Baille-Lemaire of Paris is another concern in which self-government is practised as far as possible. In its direction M. Baille is assisted by a consulting committee of six overseers, each of whom presides in turn. The coal mining companies of Mariemont and Bascoup, in Belgium, employing six thousand men between them, have long established Chambers of Explanations, and Councils of Conciliation and Arbitration, "which are model methods of settling differences in an industrial establishment."

Employee Directors.

From the workman councillor to the workman director is but a natural step, and of this we have an example in our own South Metropolitan Gas Company, which it developed out of a profit-sharing scheme. In 1894 the directors offered an addition of 50 per cent. to the bonus payable to those men who would invest half of it in ordinary stock, with the result that the workmen's shares have now run well into six figures in value. By 1898 they stood at £40,000, on which basis the holders were enabled by Act of Parliament to nominate three wage-earning directors qualified by seven years of service and the possession of £100 of stock. These were elected by the workmen shareholders on the basis of one vote for each £10 of stock up to £100; then one for each £25 up to £200; finally one for each £50 up to £1,000, so that no one could possess more than thirty votes. The presence of their representatives on the Board has been a source of strength to the directorate, and the whole system of co-operation between management and labour in this concern, due to the able initiative of Sir George Livesey, has been one of the most valuable examples in the industrial world.

The experiment was originally made with considerable misgivings on the part of many, even among those who approved it, so its operation was limited at first to three years, and at the end of that time

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renewed for nine years, subject to recision after each three years, but it has twice been confirmed. Each year one of the workmen directors retires, and each time so far re-election has followed, two of their number being employed in the works, the third at the desk. It is the evidence of the chairman that they "really do their full share of work at the board, to the full satisfaction of all their colleagues. All the principal officers of the company, and the engineers of the stations where the employee directors work, are quite satisfied; there has never been the slightest difficulty or difference. Some of our officers thought there would be with men who are workmen five days a week and directors on the sixth: these officers have told me that instead of a difficulty the workmen directors are a help, and they would be sorry to do without them. The workmen and clerks, too, are satisfied, or they would not re-elect them."

After the first three years the directors' attendance fee was raised from half-a-guinea to a guinea,[1] and the whole scheme is now known as co-partnership—a more appropriate designation than profit-sharing—but otherwise no change of procedure has been introduced. This was not however the earliest instance of workmen directors in this country, Messrs. George Thomson & Sons, of Huddersfield, woollen manufacturers, having introduced the principle nearly twenty years ago. But the example of this gas company has for some time been the most prominent, and it has resulted in the adoption of a parallel scheme by the South Suburban Gas Company, also under the management of Sir George Livesey, which was sanctioned by the Board of Trade last August, so that three employee directors will be elected this year.

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[1] The Act of Parliament limits the fees so payable to four times the director's ordinary day's pay, to which it is an addition.

Profit-Sharing, Sick Funds, Pensions.

Some space might well be devoted here to the description of various systems of profit-sharing, provision for sickness, and pensions—essential features of every well-managed business—were it not that they have been so adequately treated already by others, and that a mere condensation of the vast mass of material available would have unduly extended this volume. Another most desirable provision is a fund from which temporary loans may be obtained to avoid the necessity of taking ruinous credit or borrowing outright from the usurers who prey upon the industrial classes. Suffice it, therefore, to urge their importance among other ideal conditions of labour.

APPENDIX.

IN a valuable report just presented to the directors of Guinness's Brewery by their chief medical officer, there are set forth the following admirable suggestions, of equal value to any other of our great industrial concerns as steps which ought to be taken to promote the mutual interests of employers and employed :—

1. Encouragement of technical education amongst the younger generation.

2. Popular lectures of an educational description.

3. Encouragement of healthy out-of-door sports, athletic exercise, and gymnastics, amongst the men and boys.

4. The distribution of literature dealing with Hygiene and the Prevention of Disease.

5. Practical demonstrations in cooking to the mothers and young women.

6. Distribution of pamphlets dealing with infant feeding.

7. Giving opportunities for recreation to the men and their wives, in the shape of concerts or social evenings during the winter months.

8. Encouraging a closer intercourse between the higher officials and the labouring men after working hours.

I am firmly convinced that if the heads of departments were to identify themselves more with the social life of their men, it would have a healthy effect, and would lead to a closer sympathy and develop a greater mutual respect.

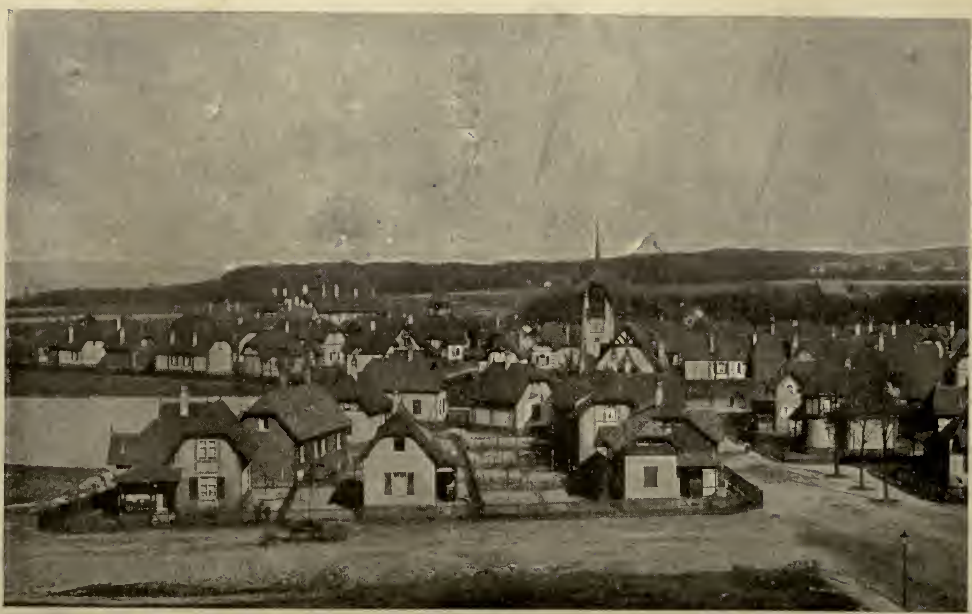
9. Lastly, and of greater importance than all the receding suggestions, is the Housing problem.

Until our families are given the opportunity of being comfortably and decently housed we cannot expect to do much in raising their social and moral standard. I therefore make so bold as to look forward to the day when a Brewery Model Village is built on the lines of Cadbury's, at Bournville, and Lever Brothers, at Port Sunlight, where our people can obtain a small one- or two-storeyed cottage at a reasonable rent. That the tenement house system, except for the very poor who must continue to reside in a congested city area, is a retrograde step, I am strongly of opinion; such a system neither conduces to good morals nor a high social standard of living.

The well-paid labourer, whose earnings are constant, should be given a chance of having a self-contained home of his own; such a cottage can be made home-like, attractive, and comfortable; in few cases is this possible in a tenement building.

PART II

INDUSTRIAL HOUSING.



ALTENHOF: KRUPP VILLAGE NEAR ESSEN.

[*see p.* 366.

MODEL VILLAGES, ETC.

Ideal Conditions of Living.

IT has already been shown that all the ideal conditions of labour described can become possible only when the centre of employment is situated on comparatively cheap land, where it has room to develop on the best lines. And as moves in this direction have almost invariably depended on concurrent enterprise to provide homes close by for the workers required, numerous instances have occurred of the creation of important villages, some of which have become models of this class of housing. These add to ideal conditions of labour ideal conditions of living. Nothing could be more desirable, and no study of the one would be complete without a study of the other.

Indeed, the home surroundings and conditions far outweigh in importance those of factory or warehouse, and an apology is almost needed for the order in which the two are here treated. The housing problem,[1] which underlies almost every social problem of working-class life, can have no other solution than the development of an enormously increased area, now for the most part country, by creating either new industrial suburbs or entirely new centres of population. This being so, it is essential for the welfare of the nation that this natural movement should in future be guided on the best possible lines, or miles of mean streets will continue to invade and destroy the country, bringing in their train nearly all the old evils. Such models as already exist are therefore of great value, and their salient features will be briefly described, with a few exceptions as the result of visits paid to them by the writer.[1]

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[1] For a statement as to the nature of the housing problem, the reader is referred to Mr. George Haw's "Britain's Homes," Clarion Press, 2s. 6d.

Of the ruder and less ideal instances little need here be said, although they are being steadily repeated, more or less on the old lines, not only in this country, but also on the Continent and in America. Of this class are most of the numerous mining villages erected wherever the development of mineral wealth has outstripped the ordinary local demand for houses, and necessitated a special supply. Not to mention the hap-hazard accretions of mining camps, the number of houses provided by large mining corporations or bodies associated with them is enormous, and the same may be said of many spinning and other firms, notably so of those established in the American Cotton Belt. But the contrast is immense between these and the model examples here to be described. Although there is no insuperable reason why the majority of this class should not partake of model characteristics, there is no comparison between the two classes. The cases of home and factory run here on parallel lines.

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[1] For particulars of many other housing experiments, not altogether models for the present, the reader is referred to the Eighth Special Report of the U.S. Commissioner on Labour, Dr. Gould's "Housing of the Working People," Washington, 1895.

HOMES OF EXPOSITION MILL HANDS, ATLANTA.

FRENCH Examples.

To take first some of the Continental instances which, though falling short of the ideal, rise well above the average—and are therefore examples which any one might imitate,—such are afforded in France by the Anzin Mining Company near Valenciennes, and by MM. Jules Chagot et Cie, of the Blanzy Mines. The former

Company has erected for nearly three thousand of its workers, plain, semi-detached houses with gardens and pig-styes (let at 4s. 1d. a month), which may be purchased by instalments without interest: the latter, which originally built over 1,000 houses in four "cités," letting them to its employees without any interest on the capital invested, has since 1893 advanced the cost of building to workmen wishing to provide their own homes, on condition of their insuring their lives in its favour for the whole cost over fifteen years. During this time they agree to repay the advance without interest, by annual instalments which represent hardly more than the ordinary rental of the premises. Only one-sixth of the land used is built over.

At Le Creusot steel mills, MM. Schneider et Cie. have provided 1,200 or more houses with gardens, each covering 6,458 square feet, and have facilitated the erection or purchase of others by advances to the workmen, till some 3,000 families have been so housed. Cottages of three rooms on the ground floor let at 4s. to 6s. 6d. a month. Their latest step, near Fontainebleau, has been in the right direction, part of their new village there being laid out for two- or four-family cottages in their own gardens, each of different design. Provision is ultimately to be made in this village for 4,000, of whom 500 only are as yet installed. A grave fault here, however, is the prevalence of drinking shops.

Colonies erected by Messrs. Harmel Brothers, at Warmériville, near Rheims, consist of 182 dwellings, let at from 1s. 1d. to 3s. 2d. a week, each of two floors and loft, with shed for animals and tools in a small garden: there are also allotment gardens. On account of the French laws of inheritance, which divide all property pro ratâ among the heirs, few have cared to purchase their homes.

MM. Sainte, Frères, spinners, have erected some 500 houses in two "cités" at Flixecourt, which, though not ideal, are convenient and cheap, the firm being satisfied with a return of 1·7 per cent. Other smaller settlements bring the number of their houses to about a thousand, with a population of nearly 5,000. Most of the houses have a garden behind or near by, of 400 square metres each. The cost of the houses alone averages £120 each, and they contain four rooms and an attic. All are subjected to regular inspection on behalf of the firm, and any who do not maintain cleanliness, or who cause a nuisance to their neighbours, are given notice, but the exercise of this right is extremely rare. Schools and co-operative stores exist in each colony.

Noisiel.

M. Menier, of Noisiel-sur-Seine, has erected since 1874 a far more attractive "cité" of 312 semi-detached brick cottages with tiled roofs, so arranged along the streets that each pair stands opposite the gardens of their neighbours. These gardens, long narrow strips 11 metres wide, covering an average area of 300 square metres, are furnished with twelve fruit trees each, and are well cultivated; most of the houses, though not in themselves picturesque, and having to an English eye the fault of standing with their sides right on the road, are adorned on the garden fronts with creepers, so that all wear an air of simple comfort. The ground before the house-door is gravelled and sanded for the use of the children. A fine tree-planted open square and a park afford convenient promenades and playgrounds, as the streets themselves are not interesting, though planted with trees, and ten metres wide. On the square are free schools for three hundred; store, bakery, restaurant with boarding house for single men; dining rooms with kitchen attached for employees only; laundry and baths.

STREET OF NOISIEL.

The area covered by each cottage is 51 sq. metres, or about a sixth of its lot. Their accommodation consists of two rooms on each floor, with attic, cellar and out-house. They are provided with a unique system of drainage with periodical flushing. The cost of building alone is £161 per house, let at £6 a year, payable monthly, all rates, repairs, etc., being met by the tenant. None of the houses are sold, but the rents, which represent but from a twelfth to a tenth of the wages of the householders, suffice to pay 3 per cent. on the investment. After ten years' occupation the rents are reduced by degrees, till the oldest inhabitants, all employed in the chocolate mill, pay nothing. A commodious almshouse awaits those unable to work longer. M. Menier has since built a smaller "cité" of 58 houses and 5 shops at three kilometres' distance.

ITALIAN Examples. ***Crespi.***

Italy possesses two interesting industrial villages. One, Crespi, is situated near Capriate, on the banks of the Adda, a river of Lombardy, and has been erected for the use of the employees of the Crespi Mills. Part consists of the old style block dwellings, although surrounded by ample open spaces and small gardens for each family. The more modern portion consists of single or double cottages of various styles suggested by experience. Some of the latter are semi-detached, with living room and kitchen on the ground floor, two bed-rooms and an attic above: in others entirely separate suites of four rooms are provided on each floor,—sometimes five on the upper—which saves the cost and labour of stairs; each has its wash-house and closet on a little covered gallery. The rent of either class of dwelling is about 3s. a week. In the centre of the village is the church—a replica of one of Bramante's masterpieces—with orphanage and schools. There are also a public laundry with running water, and an hotel belonging to the firm.

STREET SCENE IN CRESPI.

The other village has been built by Signor Achille Fazzari in Calabria, also for cotton mill workers. The Humanitarian Society of Milan is about to invest two million lire in the building of houses for workmen, and it is to be hoped that they will set a high example.

AUSTRIAN Examples.

In Austria there exists at Dornbirn, in connection with Herr Hammerle's cotton mill, beneath magnificent mountain scenery, one of the most picturesque of industrial villages. The homes of the workers are constructed with open verandahs over which creepers hang, and are artistically grouped in gardens well stocked with fruit trees. They let at from £5 or, with cow-shed and pasturage at £6 13s. 4d. a year, the price to those who wish to purchase being from £216 to £300. Near Prague, too, Baron Ringhofer, as a leading shareholder of a Workmen's Dwelling Company, has facilitated a good deal of building, exclusively for the thousand men employed in his machine works at Smichof. This Company has so far chiefly erected this type of blocks of moderate size and careful interior arrangement, the rent of dwellings ranging from 2s. 3d. a week for two rooms to 3s. 4d. for three larger rooms. But the latest type adopted is a great advance, the houses being provided with gardens, and arranged along a serpentine mountain road, planted like a park. No houses are sold, and the rentals are calculated to cover only the cost of administration and repairs.

GERMAN Examples.

In Germany, where a good deal more has been done in this direction, the Prussian State Mines at Saarbrück and elsewhere make a present of £37 10s. to £45 to any workman proposing to build his own house, and lend him without interest enough to make up the cost—£110 to £120—which he is to repay by ten annual instalments. Many thousands of such premiums and advances have been paid, and from 25 per cent. to 50 per cent. of the employees at the various mines have thus become the owners of their homes. At Arlen, in Baden, Herr Ten Brink has erected a large number of cottages for his spinners and weavers, the smallest consisting of two rooms with good attic, cellar and garden. The majority are sold to their occupants, or are in process of being so, £10 having to be paid down, and the balance by monthly instalments. Workmen who have saved £15 for this purpose receive a present of £25 on account of the purchase price.

[*see p.* 365.

WESTEND: MESSRS. KRUPPS' FIRST COLONY.

The Augsburg Carding and Spinning Company has also built houses near its mills, with gardens and lawns. Those erected by Herr Peters of Neviges, and for the most part sold to his weavers, only occupy 27 per cent. of the ground allotted to them, the remainder being gardens with fruit trees, but they are not themselves attractive. They are chiefly of four or five rooms, and the rents, not much more than two-thirds of those charged in the neighbourhood, are fixed at 8 per cent. on the cost of the house: as 5 per cent. of this is counted as rent, the houses are thus paid for in about seventeen years, and they are only let to intending purchasers. But the Company allows a rebate of 20 per cent. of the annual payments to those one year in their service, 25 per cent. to those who have completed five years, and 30 per cent. after ten years, as well as 5 per cent. for each child, as long as the total rebate does not exceed 40 per cent. The payments due are deducted from the weekly wage, and taxes and insurance are paid direct. The premises may not be used save as private dwellings. The employees of the North German Jute Factory at Schiffbeck occupy some hundreds of houses let at 2s. to 3s. a week, the contents of which, as well as the buildings, are insured by the firm against fire. Intending purchasers pay 4 per cent. as rent, 2 per cent. on account of price, and $\frac{3}{4}$ per cent. for expenses.

Ludwigshafen.

On the banks of the Rhine, in Bavaria, the Badische Anilin- und Soda-Fabrik, which occupies an estate of 544 acres, has devoted a considerable portion of it to the erection of an industrial colony, now accommodating 656 families of workmen and 108 of officials, in all some 3,500 persons. Each building, standing in the centre of a garden plot, consists of four homes, with their own entrances from their respective sections of the garden, 150 square yards in extent.

The smaller workmen's dwellings contain living room, two bed-rooms, attic, and two cellars, those of foremen having three bed-rooms. The former are rented at 1s. 10d. a week, and the latter at 2s. 4d. a week, but this does not even cover the cost of maintenance and repairs, being only about a third of what is obtained in the neighbourhood for inferior tenements. Some £75,000 has thus been invested, without return save in the class of workmen attracted. No more land in the vicinity being available on reasonable terms, the Company is now developing a second estate of 180 acres at Mutterstadt, five miles

[*see p.* 365.

SCHEDERHOF: MESSRS. KRUPPS' SECOND COLONY.

away, where 1,160 families are to be accommodated, the workers coming in by special trains. As it is, the Company pays over £4,000 a year in railway fares to bring employees from homes in the surrounding country.

[see p. 366.

CRONENBERG: MESSRS. KRUPPS' FOURTH COLONY.

Mettlach.

Messrs. Villeroy and Boch, of Mettlach, yearly invest the interest on £37,500, left in 1889 by a former partner for the purpose, in erecting workmen's dwellings. These generally provide accommodation for two families each, with kitchen, parlour, and two or three bedrooms, and cost from £125 to £200. On this 3 per cent. is charged as interest, 2 per cent. on account of sinking fund. Between 400 and 500 houses are now in occupation, built in thirteen different styles, but all with good gardens, and fitted with stoves. For the first ten years the house remains the property of the Trust, but the tenancy must continue unless the workman quits the service or fails to pay promptly. Till then repairs and insurance are at the cost of the Trust. At the end of that period the 2 per cent. will be repaid to the tenant if he desires to leave, but he may be required to surrender on these terms at any time, if leaving the firm's employment.

Gustafsburg.

The United Machine Building Company of Nuremberg has housed some two thousand at Gustafsburg near Mayence, where it employs about 1,500. There are 425 dwellings, each with its own entrance in a garden of from 220 to 400 sq. metres, with a 4 ft. 6 in. fence. Two to four are generally grouped together in one building, though some are single or in terraces: they are faced with cement, and have red tiles. In the designs harmony without monotony has been the desideratum. Each dwelling consists of living room and kitchen, bedroom and attic, with cellar and laundry under. At Nuremberg, where the Company employs 4,000 men, about 100 dwellings out of 410 projected have been built, but these are in blocks for six to eight families. Baron von Stumm, the "coal king" and steel worker, has also established several colonies for his workmen at Harlenberg.

The Krupp Colonies.

The really model industrial villages of Germany, however, are the "colonies" established in the neighbourhood of Essen by Messrs. Krupp. Peculiar interest attaches itself to the experiments of this firm, because they

1. Westend.

show the gradual development of the ideal from the most unsatisfactory beginnings. When the sudden expansion of their works after the wars of 1859–62 necessitated the provision of house-room, they erected ungainly barracks at Westend, clad in corrugated iron, which still house the least skilled workers.

BAUMHOF: MESSRS. KRUPPS' FIFTH COLONY.

2. Schederhof.

3. Nordhof.

So does the second group at Schederhof, built after the Franco-Prussian War, differing from the first only in being of more solid construction. No gardens enliven these uninviting quarters, but trees have recently been planted round them. Little, if anything, more can be said of the third colony, Nordhof, dating also from this period.

4. Cronenberg.

Almost at the same time, also, the most ambitious "colony" of all was erected, Cronenberg, with 3,000 inhabitants. This consists of 1,570 dwellings in two- and three-storey flats—3s. a week for three rooms, cellar and attic,—surrounded by little strips of garden let at 3s. a year. These blocks have been improved in appearance during summer by the abundant growth of trees in the streets, but they are black and unattractive. Round the ample market-place of the village are grouped the indispensable beer-hall, the co-operative store, the public gardens and the music pavilion, in one or other of the last two of which the firm runs weekly concerts.

5. Baumhof.

The first step towards the ideal was taken in 1890, when Baumhof, the fifth colony, was erected a little further out from town, where land was cheap enough to reduce the buildings to detached houses of two storeys, with accommodation for three or four families each, surrounded by larger gardens. Three rooms and garden are let from 3s. 6d. a week, five rooms (one quite small), with lobby and porch, 4s.

6. Alfredshof.

The right way having been thus discovered, the next village to be erected, Alfredshof, dating from 1894, and still growing, ranks as one of the half-dozen models of the world. It is only surpassed by Altenhof, Messrs. Krupp's seventh "colony," the lines of which are the same, but on a more liberal scale, the houses being reserved rent free for aged employees of the firm or their widows. There are 159 three-roomed dwellings for men with

7. Altenhof.

ALFREDSHOF : MESSRS. KRUPPS' SIXTH COLONY.

wives or daughters; 24 two-roomed dwellings for widows. Alfredshof houses are let on the same basis as the others, paying 2½ to 3 per cent. on the capital outlay. On this principle Messrs. Krupp have provided 4,300 dwellings at Essen, so that in the scale of their experience, as well as in its results, they hold the first place.

ALTENHOF: MESSRS. KRUPPS' SEVENTH COLONY.

The houses of Alfredshof and Altenhof are all picturesque, "half-timbered," one-storey dwellings, most of them arranged for from two to four families, generally so that the rooms of each are all on one floor, and the waste of stairs is avoided.[1] Each of these "apartments" has its own front door in its own ample share of the surrounding garden. All these gardens are well cultivated, those of Altenhof, where they supply the sole occupation of the old people, providing a perfect flower-show in summer, so that the whole presents a most beautiful picture. The roads are wide, and planted with trees, the open spaces being also ample, and in the latter case well laid out.

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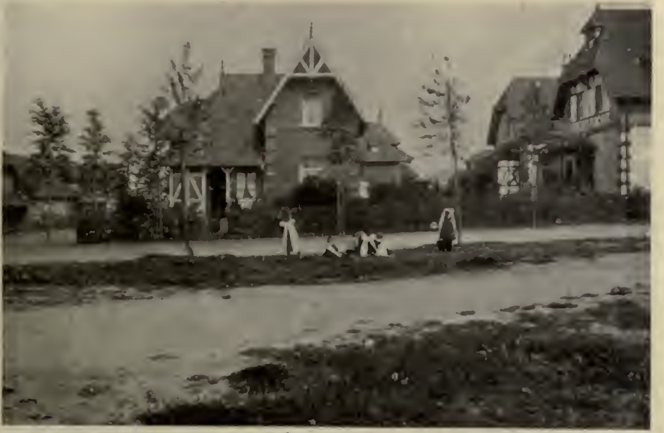
[1] For further illustrations see pages 418, 443, 451, and 457.

The rents at Alfredshof may be judged from the fact that one of the largest detached houses facing an open space, with a good garden, porch and lobby, kitchen, parlour, small reception room, two bedrooms, two cellars and an attic, with water laid on, is let at 6s. a week. The occupier earns 35s. a week. Needless to say to any who know the homes of the better working classes in Germany, that everything in them is spotless, in its place, and admirably suited for its use, though extremely simple. There is a fine co-

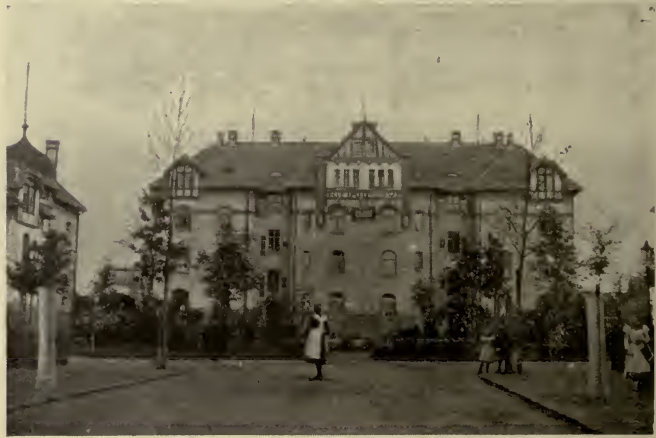


ALFREDSHOF: 6S. A WEEK HOUSE REFERRED TO.

operative store in the village. From Alfredshof to the works is about half an hour's walk.

8. Friedrichshof. (Block Dwellings.)

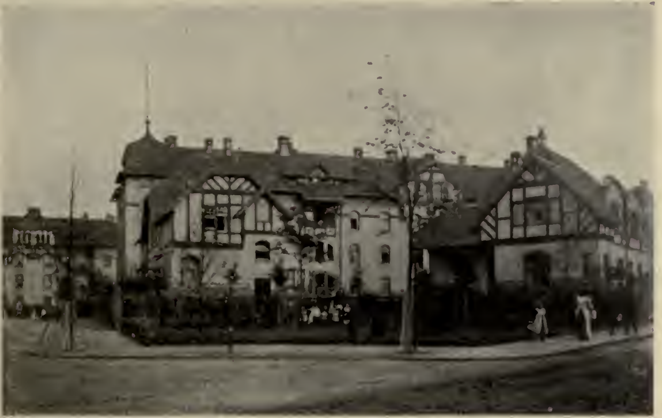
The eighth and most recent of Messrs. Krupp's Essen "colonies," Friedrichshof, appears at first blush to be a retrograde step, since it consists of block dwellings, because built where land is dearer. But on examination it proves to be as valuable a model for the construction of such blocks where necessary, as the villages are for building on outskirts or in new districts. The blocks are tastefully designed, all different but harmonizing; with broken outlines and balconies gay in summer with flowers; while no two are at right angles or parallel to one another, so that the life-giving sun may peep round all corners, and encourage the pleasant tree-planted gardens of many



A FRIEDRICHSHOF BLOCK, ESSEN.

shapes between them. No crowding is allowed; every dwelling has its own attic, in which washing may be dried instead of in the living-room; and cellarage for coals and vegetables laid in against the winter; while the fourth storey is let out by the room to those below whose requirements have increased since they came into residence.

Even more up-to-date and instructive are the blocks recently erected at the works themselves for the firemen, and others at Cronenberg for the foremen. The interior walls are plain white, and the woodwork plain varnished save on the stairs, where the walls are yellow-white with terra-cotta dado and stencilled frieze, the wood-work being a rich blue on which brass knobs and name-plates show up bright with "elbow-grease." Each family keeps the stair-



A FRIEDRICHSHOF BLOCK, ESSEN.

case clean for a week in turn. The floors and skirtings are of red tiles: all corners are rounded to prevent the accumulation of dust, and there are no cornices. In the basement are combined laundries and bath-rooms of the simplest description, faced in cement, which fall to the lot of each family one day a week. Three nice rooms, with scullery-cupboard, pantry, modern closet, cellar, attic, and use of laundry, are let at 5s. 6d. a week.

Elsewhere Messrs. Krupp possess four more workmen's "colonies"; near Bredeney, Annen, Gaarden and Bochum respectively.

Workmen's Building Societies.

Germany is also fortunate in the possession of numerous workmen's building societies which really do build—not only advance money on buildings,—and in the Rhine Valley at least there is a union of such societies which is encouraging their establishment wherever needed. Several of them have erected what may almost be described as villages on most commendable lines. A pioneer among such is the "Arbeiterheim" or "Workmen's Home" society in connection with the Bethel "Colony of Mercy" near Bielefeld, the Manchester of Westphalia. This society erects in the neighbourhood of the cotton mills groups of cottages for one or two families each, mostly the latter in the form of flats with separate entrances, one on either side. In 1900 these numbered 142. All stand in gardens, and most have tool- or goat-sheds provided. The thrifty German workman usually likes to contract for the whole

The Bethel "*Arbeiterheim.*"

house, buying it by degrees out of his savings, while he lives on the ground floor (with cellarage of the same area below), letting off the first floor at a profit, possibly by the room to single men or women.

BETHEL SINGLE-FAMILY HOUSE REFERRED TO.

A concrete example of the most expensive class will show the terms on which they are let. The rent of a single-family detached house with four good rooms, cellars and attics, and 1,000 square metres of garden, let to an intending purchaser, is just over 5s. a week, calculated on the following basis :—

		£	s.	d.
Cost:	Garden	37	10	0
	House	262	10	0
		300	0	0

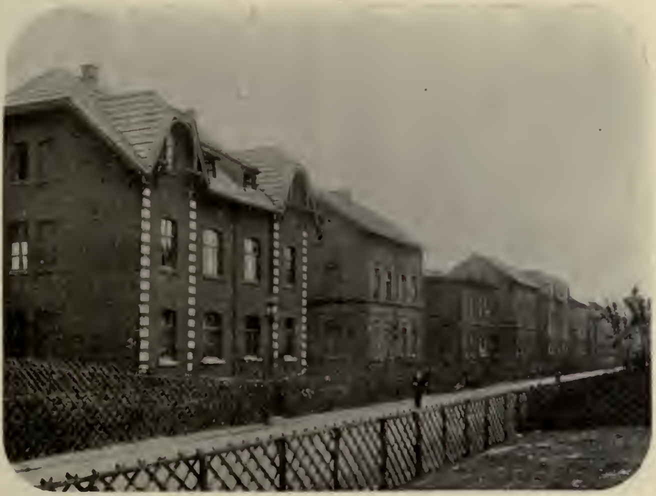
Occupier pays yearly :

	£	s.	d.
3½ per cent. on cost (£300) or undischarged balance, as rent	10	10	0
½ per cent. on cost (£300) as sinking fund	1	10	0
5 per cent. on rent (£10 10s.) for depreciation	0	10	6
	12	10	6
Rates and taxes	0	15	0
	13	5	6

In addition to this remarkably low rental, the tenant-purchaser pays what weekly sum he can on account of the price (thus reducing the interest chargeable, and, therefore, the rent), till a mortgage can be obtained for the balance, when—usually after twelve or thirteen years—the house becomes his own. The absence of restrictions on the land in the earlier experiments, however, has opened the door to the speculator, with the result that the land between the houses has been sold at greatly increased prices, but such an evil, when foreseen, can be provided against.

München Gladbach.

At München Gladbach a similar society, employing its own architect, has built since 1869 a neat little suburb of over 600 economical cottages, on the cost of which its members pay 7½ per cent. to cover interest, insurance, sinking fund, and taxes; till in six or seven years a third is paid off, and a mortgage is granted for the remainder. If payments cease before this point is reached, 5 per cent. is charged as rent, and the balance is returned. The better class houses of seven rooms cost £340, including the land, a small part of which is garden, and are thus charged at 12s. 1d. a week, the occupier letting off the upper part complete. But the most interesting houses at München Gladbach are paper-roofed. These cost £230 for five rooms with 60 square metres of garden, and are charged at 6s. 9d. a week. The paper roof requires less thickness of wall, and is inexpensive, being easily renewed at slight cost every two years. The society's capital is £16,500, on which 4 per cent. is paid, with a reserve fund of £2,500. By the end of 1902 it had housed nearly 8,000.



MÜNCHEN GLADBACH SOCIETY'S VILLAGE.
(Paper-roofed specimen in the centre.)

Remscheid.

Just outside the steel-working town of Remscheid there is another of these excellent colonies, also owned by a workmen's building society. Here again the "two family dwelling" is the favourite, as generally in Germany. In 1902, after six years, there had been erected 92 such, housing 143 families, or nearly 500 persons in all. The usual building with three rooms on each floor, having separate entrances, with cellars and attic, chicken-run and goat-stall in a nice garden, costs on an average £425 (ground, £45, street and other improvements, £18 15s., house, £361 5s.). Of this sum the occupier is required to deposit 10 per cent., or £42 10s. Then for twenty-five years he pays 5 per cent. on the price, *i.e.*, £21 5s. as rent, and 2 per cent., *i.e.*, £8 10s. for depreciation, in all

REMSCHEID SOCIETY'S VILLAGE.

£29 15s., or nearly 11s. 6d. a week, exclusive of rates or repairs. Towards this the three upper rooms will be let off at 4s. 6d. a week, reducing the actual disbursement for house room to below 7s., actually £18 1s. a year, plus rates, etc. At the end of twenty-five years the occupier becomes the owner.

In England.

Such examples could be very well followed in England, especially were the provisions of Part III. of the 1890 Housing Act (extended by that of 1900) more generally put in force. A valuable experiment on kindred lines which ought to be facilitated under this Act, is already being carried out in this country by a society registered as the "Ealing Tenants, Limited," which is erecting a little village on co-partnership principles. By this means houses are built by a company of artizans and others for themselves, on their own land. The individual members own, not separate houses, but shares equally secured on the whole, extra capital being borrowed in bulk at reasonable interest: the houses are let to the members at moderate weekly rents, the surplus which would otherwise go to the landlord being divided among them. Each tenant-member must take up shares to the amount of £50—roughly speaking the value of the site,—which is security to his fellow-members for the payment of his rent, but no one may hold more than twenty £10 shares. Loan stock is, however, issued from time to time, bearing 4½ per cent. guaranteed interest. There are already a hundred and thirty members, who come into residence as fast as the houses can be completed.

"Co-partnership Tenants."

As most of the men engaged on the building work are members of the company, and are therefore building for themselves, they have every inducement to do thorough, honest, lasting work, very different from that which they would be allowed to do for an ordinary employer. At present there are nearly fifty houses occupied, and an adjoining freehold estate has recently been secured, bringing the whole up to 21 acres, which will afford room for about four hundred houses.

HOUSES BUILT BY THE "EALING TENANTS, LTD."

The management is in the hands of a board of twelve, elected by the members, each of whom has one vote only. The individual tenant is saved all the trouble and expense of employing solicitors, surveyors, architects and builders, and of buying his land. He avoids the possibility of loss if he has to leave the neighbourhood, because he will then take with him simply his shares, entitled to their five per cent. interest, which he can sell when convenient, probably to the next tenant of his house. And so long as he is a tenant and a member of the owning company, he will receive his fair share of all the profits.

A house containing three fair-sized bedrooms, bathroom, two sitting-rooms, kitchen and scullery, well planned and comfortable, and of sound and substantial materials, lets at £32, but houses in the side street let at 13s. weekly, inclusive, equivalent to an annual rent of about £28. Smaller houses have recently been erected, each with bath and garden, from 10s. 6d. a week. All have from 60 to 70 ft. of garden at the back, and 15 ft. in front, the narrowest frontage being 16 ft. Tenants have the satisfaction of knowing that part of the rent will accrue as profits to their credit, so that in time their shares will bring them in as much or more than the rent they pay.

HOLLAND.
Agneta Park.

In Holland there exists a peculiarly interesting industrial village, that of Agneta Park, built on similar lines, in connection with the Van Marken Yeast and Spirit Works near Delft. It is owned by a "Common Property Society," formed in 1883 by Mr. Van Marken for the purpose of "meeting the elementary needs of life." Four-fifths of its capital, about

REESE LIBRARY OF THE UNIVERSITY OF CALIFORNIA

£13,000, was raised by Mr. Van Marken among his friends by a 4½ per cent. mortgage on the property, the remaining fifth being a free loan from Mr. Van Marken. The occupants pay 7 per cent. on the cost, to cover taxes and all charges, but instead of becoming in time the owners of their individual homes, they receive shares in the society's stock, which, when the mortgage is paid off, will bear interest.

AGNETA PARK.

One difficulty arising out of this system has been that many of the tenants, failing to realize the identity of their interests with those of the society, have given up doing their own repairs, or taking all possible care of the premises, preferring to get the society's workmen in.

The arrangement of the village, which occupies part of a park of ten acres, and provides for eighty families, is admirable. The main road is circular, so that a pleasing variety of view is obtained, and though the gardens are small, mostly in front of the houses, they are neat and tasteful. Accommodation for rubbish, etc., is provided by long, box-like constructions of wood painted green, beside the party fence to the gate. Clothes are dried in front on excellent horses built on the plan common for roosts in our poultry houses. The houses themselves are comfortably planned, and the interiors are very cosy. Mr. Van Marken's own house is at the entrance to the village, but though Mrs. Van Marken—after whom the Park is named—takes a close personal interest in the welfare of each of her neighbours, he, as their employer, takes care to see nothing amiss, so that all feeling of espionage has vanished. The "Common Property Society" owns also a well-filled

CHILDREN'S PLAYGROUND AT AGNETA PARK.

store in the village. Members receive a share certificate for each hundred florins (£8 6s. 8d.) paid in, whether as rent or purchase money. Close by there are allotment gardens, and a children's playground with merry-go-rounds, a sand heap under cover, with tea tables close by for the mothers, while the remainder of the ground is laid out for recreation, with a lake, lawn and band-stand.

AMERICAN Examples.

Leclaire.

Another village established on co-operative lines is Leclaire, near St. Louis, the creation of Mr. H. O. Nelson, head of a large painting and plumbing business in that city. This was commenced in 1890 on a tract of 125 acres, fifteen of which were reserved or the factory—built on one floor level throughout,—but this estate has since been extended by the purchase of adjoining woods. The land is sold to intending residents, whether employees of the firm or not, in lots 150 ft. deep, at 16s. 8d. per foot frontage, this charge including all improvements, such as road-making and lighting, fencing, tree-planting and water-supply; but the company reserves the right of pre-emption of house and land at cost price in the case of a resident leaving or desirous of disposing of his property. This precludes the danger of speculation, and secures the value of improvements to those who create them.

As a beginning some of the houses were built by the company for their occupants, and sold to them on easy terms, and a few are kept for temporary letting, but the object is to encourage land-holders to build for themselves, money for which purpose may be raised in any way preferred. The actual contract signed by land-holders at Leclaire is unique, as also is the promise to pay by instalments. "Their brevity and simplicity, I think," writes Mr. Nelson, "will seem anomalous to a British solicitor, but they cover the case fully. The truth is, I myself had to pound a lot of 'meets and bounds' and other useless repetitions out of our attorney's MSS. . . . We never have a lawyer in the transactions. Our book-keeper simply fills out the blanks; we have them signed, acknowledged, recorded and delivered: much the same as we should sell a bath-tub."

The average cost of land and wooden house complete, with cellar, plumbing, and electric wiring, works out at about £60 per room, or say £200 for a three-roomed house, £240 for one with five, the lots being usually 50 feet wide. On account of this monthly payments of from £2 10s. to £6 are received, the amount depending on the ratio between the purchaser's earnings and the number he has to support out of them.[1] A young man starting betimes to purchase a home is thus induced to invest a large proportion of his wages, which will mean less and less to pay each year as family responsibilities increase. Those who leave before completing the purchase receive back all sums paid in, with interest added, less an agreed rent chargeable for the time the house has been occupied. No fairer arrangement could well be made, since it leaves the occupant perfectly free, and assures a good investment in any case.

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[1] Wages in the Nelson Works range from 6s. to 9s. for unskilled, and 10s. to 11s. for skilled, on a nine-hour day.

Leclaire is picturesquely laid out, with public gardens and hot-houses under the care of the Company, and everything is done to encourage the private cultivation of gardens, special provision being made in this respect for the children. Mr. Nelson himself lives in the village, and is a great favourite with the little ones, as well as a genial neighbour rather than master to their parents.[1] "In the village,"

LECLAIRE: MR. NELSON WITH TENANTS' CHILDREN.

writes Mr. Nelson, "there is no master, in even the remotest sense. The design was to make favourable conditions for work, intelligence, recreation and duty. We have not aimed to make it large or extraordinary." His one idea, implied in the name he has chosen, is to convert the whole concern, business and village, into a co-operative undertaking, which is being accomplished by degrees as the employees avail themselves of the opportunity. One of the shops is co-operative already.

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[1] The children shown in the picture hailed the trap one by one as we drove round, and were taken in. When there was room for no more the writer got out and took the photograph.

There is no liquor saloon in Leclaire, though two exist across the line in Edwardsville. On the other hand there are billiard-rooms, bowling-alleys, baseball grounds, tennis-courts, skating pond, swings, and the like on the spot, as well as a school, a kindergarten, an industrial school, and a public library with regular lectures and entertainments during the winter months. There is a residential club for unmarried men employed in the works, which, as opportunity offers, are being gradually moved out the eighteen miles from St. Louis. Formerly there existed a co-operative store in the village, but this could not compete with those in Edwardsville and St. Louis. Coal is supplied to the residents by contract at 5s. a ton, and electric light at a shilling per light per month. Cows and poultry are kept by several of the residents. One cannot but feel that industrial villages established on such lines would prove successful in connection with many a growing concern in this country, now cooped up in town.

Pullman.

In contrast to the freedom enjoyed at Leclaire may be mentioned one of the most notable experiments of its class in America, the village of Pullman. This covers three hundred acres, ten miles from what was Chicago when it was erected in 1880–4, but since engulfed by the mushroom city. Its eight miles of streets, mostly 66 feet wide, with lawns on either side, are all tree-planted, but the houses are of town style, in serried rows of two-storeyed red brick, 100 feet from front to front, with small gardens and entries behind. The main boulevard is 100 feet in width. The centre of the village is formed by a market building of some pretension in an open square planted with trees, surrounded by an arcade recalling Italy. At a short distance, fronting on "Arcade Park," is a block of shops, the passage between which is glazed; and there is a licensed hotel. There is one church, owned, like everything else in Pullman, by the company, which is let out to bodies desiring its use, but independent accommodation for worship has sprung up outside the boundary. A theatre, schools, and a subscription library are also among the local public buildings.

MARKET SQUARE OF PULLMAN.

The 1,550 houses contain five or seven rooms, besides a good cellar, a pantry, and in most cases a bath-room. Larger ones are used as boarding-houses. The site of the village having formerly been a marsh, it is exceptionally well drained with sewers, which place it ahead of the average American town. Gas and water are laid on, the latter from a conspicuous tower in the adjoining works. The population, which is not limited to Messrs. Pullman's employees—though naturally they are in a majority, and were at one time the only inhabitants,—is now nearly 10,000, of whom 6,000 work in the car factory; but it was once as high as 14,000. The gardens and roads were formerly maintained and watered by the company, but since the strike of 1894 this practice has been abandoned, so that now, in spite of the general prosperity of the place, it wears an air of neglect.

The trouble arose to some extent—as apart from the strike—from the refusal of the company to permit householders to acquire either land or houses, or pay rates direct, and from its objection to their exercising independent political rights, or expressing opinions in print. The result was that the thrifty—to the number of over 600 in 1897—bought their homes with advances obtained through the company's savings' bank, and with its approval, in the streets which rapidly sprang up in Hyde Park, close by. The object of retaining the ownership was to (preserve the social, moral and physical standard set up,) at least in the limited central area. Although the Vice-president of the company disclaimed all idea of paternalism in the plan, it was evident that sufficient freedom of action to suit the American mind was not permitted, and the feeling that even in their houses they were not beyond the master's reach seems to have galled from the first.

Thus one of the best-planned efforts to secure the material welfare of the workers and their families, from the details of which there is much to learn, has become to many almost a byword because of its failure in one direction, and has fallen under an obloquy far from altogether deserved. Pullman undoubtedly set an example, and has on the whole produced results which were good: it provided healthy homes at reasonable rents, amid equally healthy moral influences, and many thousands have cause for thankfulness that their lives were either commenced or spent in such a village, instead of in the overcrowded working districts of the city. Judged from

PULLMAN AT ITS BEST: "ARCADE PARK."

the points of view of the remarkably low death rate, and the almost complete absence of drunkenness and crime, the efforts of the founder must be held to have succeeded. The curious sequel, however, is that after the village had existed nearly twenty years, the Courts decided that its erection and maintenance did not fall within the operations permitted by the company's Articles of Association, so that arrangements on an entirely fresh basis have had to be made.

Colorado Mining Camps.

From Chicago to Colorado is no far cry as distance counts in the New World, but the conditions prevailing at the two points differ about as widely as between any two on the American Continent. The rough-and-tumble mining shanties of the early camps of the Colorado Fuel and Iron Company, out on the bleak foot-hills of the Rockies, have given way under praiseworthy management to what for that part of the world are model industrial villages. The "company houses" contain from four to six rooms, well planned for comfort and convenience furnished with water connections wherever possible. Vegetation being scarce in that region as well as water, the only gardens are specially irrigated plots where residents can raise their own vegetables, but plenty of open land surrounds the quaint cubical wooden buildings, into which as much diversity is introduced as is consistent with economy and consequent low rents. A glance at the contrasting houses privately erected is sufficient to disarm all criticism, and when it is remembered that this splendid work is being done by the company in forty different communities, ranging in population from five hundred to three or four thousand, the total effect is magnificent. Excellent schools, clubs and social institutions are maintained in all.

OLD-TIME MINING SHANTIES OF COLORADO CAMPS.

Berwick, Pa.

As far back as 1836 the Jackson Woodin Mfg. Co. of Berwick, Pennsylvania—now merged in the American Car and Steel Company—began to encourage its workmen to build houses for themselves, by offering to those who had saved the price of a lot to advance the cost of building without interest, on a mortgage to be paid off by regular instalments. This experiment proved most successful, some hundreds of such cottages having been erected at a cost of £160 to £240 or £300 apiece. Some three hundred more have been erected by the new company for sale on similar terms. Till recently this has secured them a steady and exceptional class of workmen, all Americans, among whom only one strike has occurred, organized by the "Knights of Labor" in the eighties. During the panic of 1873 the men met and voluntarily reduced their wages 20 per cent., so as to keep the concern going, a hitherto unheard-of proceeding. The new company, however, having largely extended the works, and having introduced a host of foreigners, some trouble has arisen.

HOMES BUILT BY COLORADO FUEL AND IRON COMPANY IN PLACE OF SHANTIES.

Among the best villages erected in connection with Southern Cotton Mills which the writer has had an opportunity of inspecting are those belonging to the Exposition Mills at Atlanta in Georgia,[1] and the

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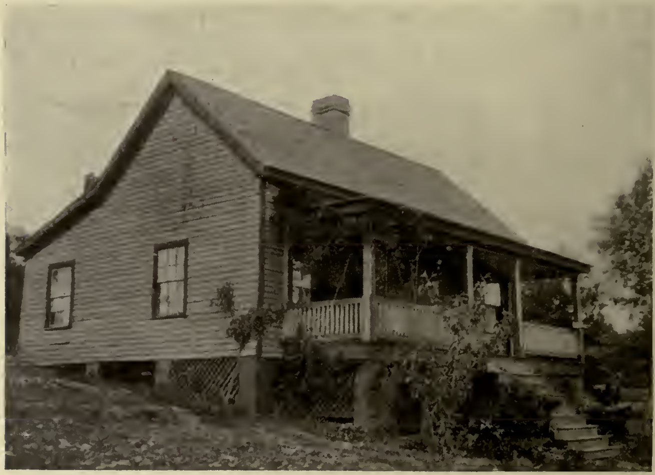
[1] For illustration see p. 353.

Proximity Mills at Greensboro, North Carolina. In both cases they consist of rows of cube-like dwellings, in the latter painted white picked out with green—each in its own garden—most of them containing three or four rooms—and let at an average of 2s. 9d. per room per month.



STYLE OF HOMES FOR EMPLOYEES, SWIFT'S MILL, ELBERTON, GA.

Pelzer.

A South Carolina Cotton Mill, the "hands" of which are well housed as things go in the "South," belongs to the Pelzer Mfg. Co., whose policy is "absolute industrial control, coupled with a large regard for the general welfare of its employees," with whom it has had the most friendly relations since it started in 1881. Some 2,800 of them occupy a thousand cottages averaging four rooms, let at a rent of 2s. per month per room, which includes no return on the capital invested; no houses are sold. Indeed, the whole of Pelzer, with a population of 6,000, may be said to be owned by the company, which has erected five churches of various denominations, and maintains free schools.

STYLE OF HOMES PROVIDED FOR EMPLOYEES AT PELZER.

Vandergrift.

A much more attractive industrial village, chiefly inhabited by the employees of the American Sheet Steel Company, is Vandergrift, in Pennsylvania, 38 miles from Pittsburg, described by its promoters as "a working man's paradise"—a way they have in America. With the object of attracting a better class of workmen than usual, the subsidiary company formed to create the village in 1895 laid out 640 acres to the best possible advantage, and offered building lots at a fair price without any restrictions save that liquor should never be sold on it. Building lines were not even fixed, the new owners being left to decide among themselves what would best suit all in each street, thus laying the foundations of what by 1901 was a self-governing municipality of 6,000 inhabitants. The houses are detached, and for the most part picturesque, without disfiguring front fences. They vary in cost from £280 to £600, so that they may well be attractive.

A VANDERGRIFT STREET.

A landscape gardener was employed to plan the wide streets, which follow the contour of the ground in graceful curves, and permit of numerous angle-plots being ornamented with shrubs and flowers. No out-houses have been allowed, and the back gates are reached by alleys running through each "block," along which are laid the excellent drainage, water supply, gas fuel and electric light mains, connections with which were completed throughout from the first to prevent tearing up the streets. These and the alleys are paved in vitrified brick, a great advance for America. Four sites were offered for as many churches, half the stipulated minimum cost of each, £3,000, being found by the company. Everything else, including the building of houses, was left to private enterprise, and the result has been most successful, in a great measure on account of the abundant regular work afforded by the steel mills, eighty per cent. of whose employees now own their houses.

Wilmerding.

1905
1889

Fourteen years ago the Westinghouse Air-Brake Company erected a large number of houses cheaply by extensive cash contracts for the use of their employees at Wilmerding, in Pennsylvania, selling them at cost by instalments spread over ten or fifteen years. The terms have been subsequently modified to one-fifth of the price in cash, and the remainder on mortgage at 5 per cent. Those really intended for working men are let at 14s. a week, with bath-room and garden; the majority, however, are still more expensive two-storey brick houses with six rooms and attic, letting at 24s. a week. Of late, however, the company has added about 160 (making 360 in all) on the cheaper system known as "cottage flats," built entirely of brick.

Ten miles from Baltimore, at Sparrowpoint, the Maryland Steel Company, employing an average of

4,500 workers, has laid out part of an estate of some hundreds of acres with good, tree-planted roads and a public park, to house about 2,000. They have erected thereon eight hundred houses, mostly two-storeyed cottages, with water, baths and drains, and containing from five to fifteen rooms. For public use there are churches, a club, a fire-station, and schools within two miles of which no intoxicating liquor is allowed to be sold. Part of Pratt City, near Birmingham in Alabama, was built by the Thomas Mine and Steel Company, but though a vast improvement on the local provision of houses for such workers, it is still below our ideals. The facilities afforded for the

Sparrow-point.

HOUSES AT PRATT CITY, BIRMINGHAM, ALA.

occupiers to become the owners of their houses must be considered its chief attraction, for it is not beautiful.

South Manchester.

Several much more inviting industrial villages, all real models, are to be found on returning to the peaceful charms of New England, quite another world from the rugged West. One of its oldest and most idyllic is South Manchester, reached by trolley or train from Hartford, Connecticut, though except in the newer portion the houses are too scattered to convey much idea of a village. The impression produced on the visitor is that of a vast, well-kept park of over a thousand acres, in which stand the handsome residences of some fourteen families of Cheneys, interspersed with the humbler but not less homelike dwellings of their employees, and at two or three points with unobtrusive buildings, which, on a closer approach, prove to be Messrs. Cheney Bros.' silk mills, employing some 2,500 hands. "We have nothing to show," they declare. "We are not philanthropists : this is our home, and we like it to look nice, that's all." But it means a good deal, especially when it has been the family home for over a century : already it is the ancestral home, acquiring some of the finest features of the historic estates of the Old Country, but pointing out to them the way whereby old sores may be healed, and the dawn of an unprecedented prosperity ushered in.

Every one of the workpeoples' houses, most of them detached cottages, stands in its own garden, and those occupiers who wish to own them receive every encouragement, while all are free to live on the estate or not as they wish. Here again the sale of intoxicating liquor is almost the only prohibition. There are excellent schools, a fine public hall, a library, baths, and a volunteer fire-brigade of which they are proud.

STREET OF WHITINSVILLE.

Whitinsville.

Another instance of very much the same class is Whitinsville, in Massachusetts, reached from Providence or Worcester, surrounding the cotton machinery works established by the Whitin family eighty years ago. Some 2,500 workers, including two hundred single men in a most admirable boarding-club, are here housed amid beautiful surroundings. There has been no set plan for building a village, but street after street of neat houses has been erected as required, till there are about 500, gleaming white amid abundant green, the trees on either side of the way having had time to develop. A striking feature is the pleasant and tidy appearance of the backs, so generally neglected in this class of property. Although 3 per cent. is earned by the capital invested in them, the rents average but a tenth of the wages earned by the heads of families, a truly ideal condition. The purchase of the houses by the occupiers is permitted, but no special inducements to this are offered. No strong drink is sold ; there are no poor, for no one lacks work or a home ; and there are never any labour troubles.

WHITINSVILLE BACK YARDS.

Several members of the now extensive Whitin family live in the place, their spacious grounds open to all, for all are treated alike, and are cared for in sickness ; the lowest workman freely addresses the principals whenever he will, and meets with courtesy. In the centre is a little park, the gift of " the family," and there are the usual public buildings, library, etc., largely derived from the same source, with excellent schools which cost some £25,000. More than three-fourths of the village belongs to the Whitins.

OAKGROVE, WILLIMANTIC.

Oakgrove.

The Willimantic Linen Company of Connecticut has built for its workpeople a group of detached wooden houses near the factory at Willimantic, known as Oakgrove, varied and picturesque in architecture. These are let to employees subject to a fortnight's notice, at rents equivalent to from ten to twelve-and-a-half per cent. of their wages, without restrictions. On one occasion the rents were lowered to meet a corresponding reduction in wages, but when these went up the rents did not follow suit. They are calculated to return 3 per cent. on the capital invested, and run from 5s. 6d. to 8s. a week for six rooms, not much more than a third of that demanded for similar accommodation in the neighbourhood.

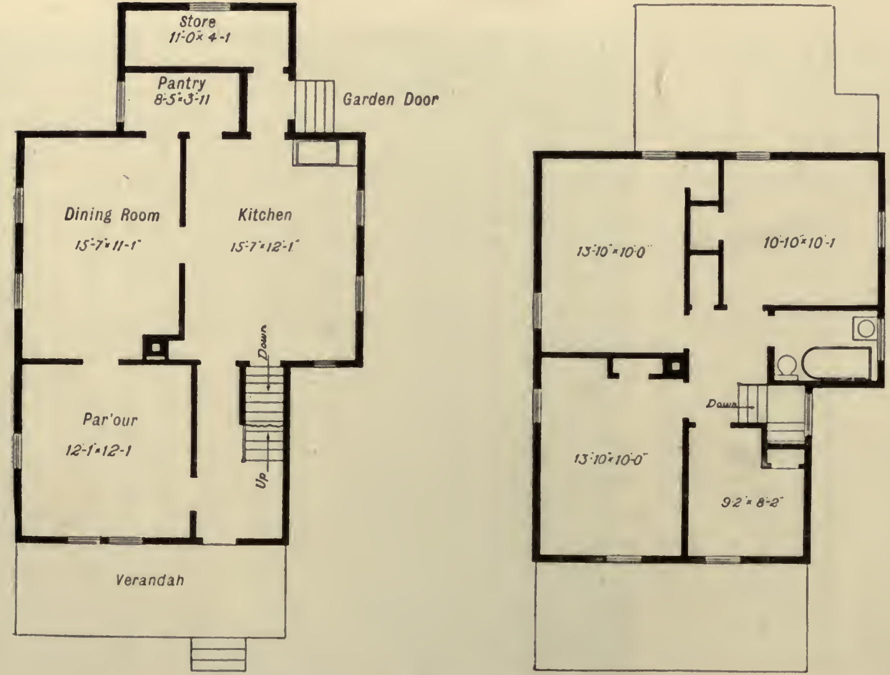
Ludlow.

Half an hour from Springfield in Massachusetts the Ludlow Manufacturing Associates are erecting the most modern village of its class in the United States, to house the operatives at their cotton mill, who were falling a prey to speculators providing wooden tenements of the worst class at fancy rentals. It was found that to secure an independent cottage instead of herding in block dwellings the workpeople were willing to pay more, or take less accommodation. Although the village was commenced in 1868, it is only of recent years that its 1,500 acres have been steadily developed. Now some 1,200 of the 1,800 employees occupy rather over 300 houses, while fresh streets are being laid out and planted with trees. The experiment was made of building a few centrally-situated modern blocks of flats, but in the words of the manager, "This venture has not been successful at all so far, since no one apparently wants to live in a block, no matter how modern or how well contrived. Cottages have had their educational value, and all prefer to live in separate houses."

The houses erected—of wood, as almost always in "the States"—are essentially "housekeepers' houses," that is to say, planned entirely from the point of view of the one woman who has generally to do all the work in them, with rooms wisely arranged, and plenty of stores and cupboards. This most commendable principle is one too often lost sight of, but which is of the utmost value. The British house-wife, of whatever class but that which employs its own architects, has so long had to submit to the convenience of the unadaptable builder, that the possibility of such a principle seldom or never occurs either to her or her husband, much less to the builder or architect. It would seem to require the instinct of an educated woman and the possession of rank to light upon this sweetener of home-life, as when Queen Alexandra, inspecting the workmen's dwellings which the London County Council has erected at Millbank, commented on the absence of cupboards. We need to go to Germany or elsewhere to realize the saving effected by having the rooms on one level.

STREET IN LUDLOW.

At Ludlow every house is fitted for a bath, but this


Store
11'-0" × 4-1
Pantry
8-5" × 3-11
Garden Door
Dining Room
15'-7" × 11-1"
Kitchen
15'-7" × 12'-1"
Down
Par'our
12-1" × 12-1
Up
Verandah
13'-10" × 10'-0"
10'-10" × 10'-1
Down
13'-10" × 10'-0"
9'-2" × 8'-2"

GROUND AND FIRST FLOOR PLANS OF A LUDLOW COTTAGE.

is only supplied when the socially rising occupant is willing to pay a slightly increased rent. The rents charged provide a payment of 3½ per cent. on the capital invested, but the return to the shareholders is wisely held to include the better and steadier class of workers thereby attracted, and the consequent saving of friction and waste.

As the Association pays from two-thirds to three-fourths of the local rates, it exercises a large share in the control of the township, to the great advantage of all. Men's and women's clubs, a library, dining-rooms outside the works, boarding houses for girls, and a hotel, count among the local features of what bids fair to become in time one of the foremost model villages.

Hopedale.

As yet, however, America's best is a somewhat older creation, which has only by development come within the scope of these pages. This is Hopedale, also in Massachusetts, adjoining Milford, with which and with Whitinsville it is connected by electric trams. It was established in 1841 as a Christian Socialist community by the Rev. Adin Ballou, whose statue has recently been set up in a public garden. Its existence as dependent upon industry dates only from 1856, when Messrs. Draper, another firm of cotton machinery makers, took it over, since which time they have greatly extended the village.

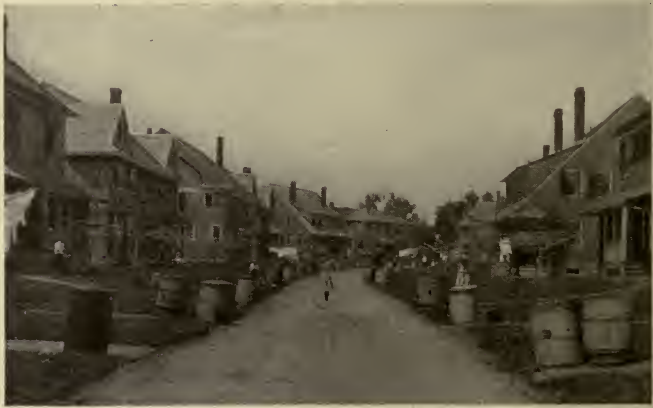
Now a large proportion of their 3,000 men live there in comfortable houses let from 6s. to 20s. a week, the interest earned on capital so invested varying from 2 per cent. to 4 per cent. The better class modern houses, finished in unstained "shingle"—split sheets of wood laid like tiles,—are of specially tasteful design, letting at 12s. a week (or 14s. if fitted with heating furnaces), rates and insurance included. This on an average cost of £900 each, yields a bare 3 per cent., and the return is lower than would induce a private individual to put them up. The usual accommodation consists of parlour, dining-room, kitchen, pantry and china cupboard on the ground floor; three bed-rooms, bath-room, and w.c. on the first floor, and a good attic store, sometimes adapted as an extra bed-room. A more economical style of houses, consisting of two floors only, contain two to eight tenements each, of four or five rooms, let at 8s. or 9s. a week.

NEW PART OF HOPEDALE IN COURSE OF ERECTION.

Nearly all have water, gas, electric light, baths and good drainage, and those who will may purchase,

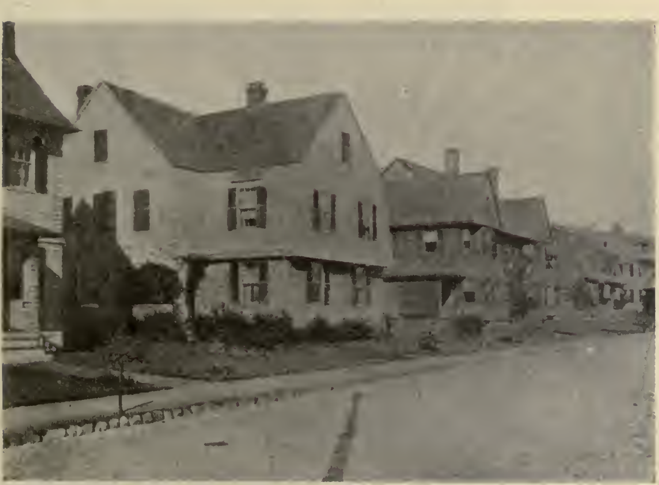
REESE LIBRARY
OF THE
UNIVERSITY
OF
CALIFORNIA

though few do so, as the population is not stable. Here, as in Whitinsville, the back premises are particularly attractive, strict sanitary regulations being in force, and some £40 being offered yearly in prizes for the best kept "yards." In the newer portion of the village, Bancroft Park, the roads are curved, to avoid the wearying sameness of the interminable American streets, and all are planted with trees.

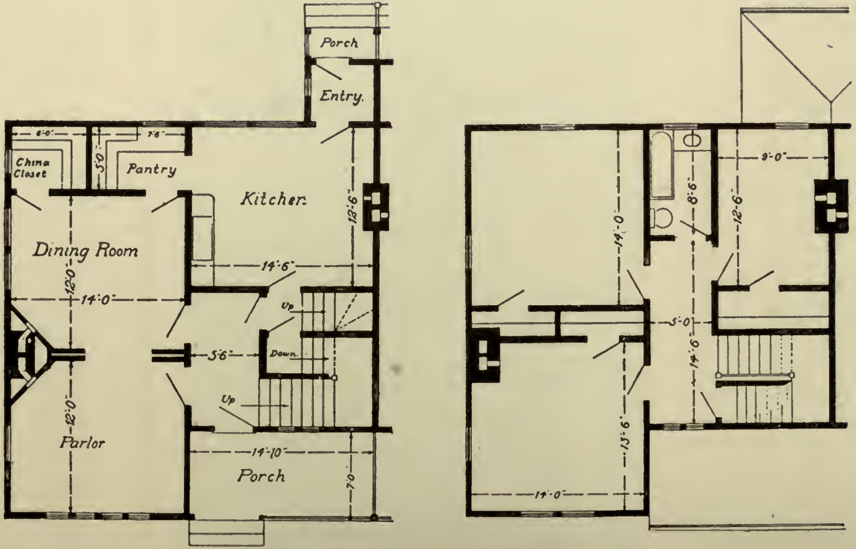


HOPEDALE BACK YARDS.

A peculiarly fine effect is produced in Hopedale, as in all high-class American villages, by the absence of front palings, or walls and gates, so that on both sides the roads are bordered by lawns down to the "side-walk," and the whole presents a spacious park-like appearance. The advantage of this plan over the conventional English front pen cannot be too strongly insisted upon: it would be the saving of many a mean suburban street in this country. The idea that dogs and children need to be kept out is derived from the unfortunate experience resulting from an open gate under existing circumstances. When there are no walls and no gates, no temptation to trespass is offered, unless it be to "cut off a corner," which is easily provided against by stretching a wire some inches above the ground, the efficacy of which as a toe-trap has been tested by the writer. Iron fencing between the houses preserves the back premises from invasion, and the fronts being entirely open, everyone with credit at stake may be relied on to keep his section up to standard. Hopedale is



A STREET IN HOPEDALE.


Porch
Entry.
6·0"
7·6"
5·0"
China Closet
Pantry
Kitchen.
12·6"
Dining Room
14·6"
12·0"
14·0"
Up
5·6"
Down.
Up
12·0"
Parlor
14·10"
Porch
7·0"
9·0"
8·6"
12·6"
14·0"
5·0
14·6"
13·6"
14·0"

GROUND AND FIRST FLOORS OF A HOPEDALE HOUSE.

especially fortunate, too, in possessing some 150 acres of park, including six acres of playground, and a very pretty broken piece of water running its whole length.

Biltmore.

Two or three other model villages of the United States deserve mention as affording lessons of value, although not of an industrial character. For beauty of design that of Biltmore, erected by Mr. George W. Vanderbilt, near Asheville in North Carolina, ranks first. It is small, consisting in 1903 of but 100 houses with a population of about 400, but it lies compact, as it were in a garden formed in the levelled floor of a valley; and it combines the advantages of town and country, for it is only fifteen minutes by tram from Asheville, and less by train. All gardens are cared for by the Estate Office, but

BILTMORE, THE PLAZA.

there are "no restrictions, except that howling dogs cannot be kept, and fowls are not permitted to be at large."

A picturesque railway station, suited to its surroundings, stands on the "Plaza" or public square, from which the main roads radiate, one on each side crossing them at right angles from the other extreme point, and two others, crescent-shaped, embracing the whole. Lawns run down on all sides to the red-brick pathways, flanked by shrubs against the pebbled houses—some half-timbered with brown-grey "shingle" roofs and red chimneys. No effect could be more cosy or pleasing. Artistic, old-style, wrought-iron standards at the street-corners bear fifty-candle power incandescent lights in suitable lanterns, with the names of the streets below in tasteful lettering.

On the Plaza are the stores and restaurant club, with flats and single apartments over, the former letting at about £3 a month for five rooms, and the latter at £1 a month each. At the far end stands the church, flanked by the hospital and school-house, all in harmony with the general scheme. A special feature of the latter is its domestic science department. A gymnasium and fire station are planned. Only one street, however, offers accommodation to the working classes, comfortable four-roomed houses with verandahs and stores at £2 a month, the others averaging £4 to £7 a month, but the æsthetic principles which have had scope here might well be applied to industrial villages elsewhere, more especially to modern suburbs and garden cities.

Echota.

A small but tasteful experiment in industrial housing (chiefly for the benefit of employees of the Niagara Falls Power Company) has been made at Echota by independent enterprise, about 100 houses standing on part of 84 acres in lots 115 ft. deep, twenty feet back from shaded streets 50 ft. in width, of which half is macadamized. Great variety has been secured in the designs, which range from single five-roomed cottages let at £3 8s. 6d. to £5 16s. 6d. a month, to houses of four tenements the rents of which are from £1 17s. 6d. to £2 10s. a month, water, electric light, and care of garden included. At present none are offered for sale.

Zion City.

"Dr." Dowie's Zion City in Illinois, commenced in 1901, about an hour by rail from Chicago or Milwaukee, also affords some useful suggestions to would-be garden city builders. The land acquired covers 6,500 acres, or upwards of ten square miles, one side being formed by the shore of Lake Michigan, above which parts rise to a height of 176 ft. The roads are from 66 ft. to 150 ft. wide; the boulevards 300 ft. with double roads, and 100 ft. park-way along the centre, linking up six parks, the central one covering 200 acres. No house-lots are offered less than 40 ft. wide, and 140 ft. to 200 ft. deep, the building lines being either 30 ft. or 60 ft. back, according to the street. The best lots are held in reserve till the demand shall have increased, and one section is developed at a time, to prevent scattering. One residence only is allowed on each lot, so that the place can never become overcrowded. All sewers, gas and water supplies, and overhead or underground wires being confined to the broad back alleys, future disturbance of streets and traffic will be avoided.

The land is leased till 3000 A.D., on specific conditions as to use and occupation, and even as to the personal habits of the tenant, violation of which forfeits all right to the land.[1] Leaseholders must also be holders of stock in the Zion Land Investment

A STREET IN ZION CITY.

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[1] "No saloons, no harlots' dens, no tobacco shops, no theatres, no gambling hells, no opium joints, no drug stores, no secret lodges, no pig markets, no surgeons' offices, no labor unions, no oyster traffic"—such is the official summary of restrictions in Zion City.

Association, on which 6 per cent. is guaranteed, the certificates being received in exchange for land as desired, when an additional 2 per cent. is paid. At present, like all new American towns, the place has a wilderness look, the less important roads presenting more the appearance of fields than thoroughfares, but buildings are steadily rising, and a large department store, a tabernacle, an administration building, a hospice, a school, and other imposing, if not artistic edifices line the main street. The residential and factory sections are distinct, being separated by the railway line: a large lace factory, brick-yard, confectionery, bakery, etc., and power-house are already in operation.

The future of Zion City must depend, however, not only on its natural advantages and the ability displayed in its conception, but on the continuance of support to the peculiar doctrines, many of them admirable, for which it stands. In the local official language, it is "but the first of a number of Zion Cities to be established near the great cities of the earth . . . under the direction and leadership of the Messenger of God's Covenant, Elijah the Restorer, Rev. John Alexander Dowie, the General Overseer of the Christian Church in Zion." Great stress is, however, laid by the founders on the industrial opportunities to be developed side by side with the residential, so as to afford remunerative employment for the people as they settle. But the danger here is in the concentration of those industries under one administration, on which everything therefore depends.

Garden City, L.I.[1]

The original Garden City, nineteen miles from New York, on Long Island, much less realizes the ideals of the movement known by that name in England, as it is designed entirely as a residential suburb for a fairly well-to-do class. In the lifetime of its founder, the late Mr. A. T. Stewart, the 2,600 acres in the country laid out as a model village remained practically undeveloped, and the venture was regarded as a failure. Only about a hundred houses surround the fine cathedral, schools and public park, but recent railway developments promise to make it a most desirable place of residence, and ultimately a great success. Here again restrictions are laid on the land which will for ever preserve its attractions. Lessees have to bind themselves to build at a certain cost within two years: one dwelling with its own stables or out-buildings only on each lot; the building line for residences being 75 ft. back, and for stables, etc., 150 ft. back, and 20 ft. from either side of the lot; no building to be more than 60 ft. in height. Gas and water are supplied, and hotel and stores exist.

Homewood.

Another attractive experiment on Long Island, a suburb of Brooklyn intended for the clerk or shopman class rather than for the artizan, but offering valuable experience as to methods, is the village of Homewood, built in 1897 by the City and Suburban Homes Company of New York, the dividend of which is limited to 5 per cent. It consists of 530 house-lots for men earning £160 to £300 a year, and to keep speculators out, no land is sold without a house. Until 1925 the use of the land for the erection of factories, workshops, or tenement houses is precluded, and for saloons until 1996. No lots are reserved.

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[1] The other places of this name in the United States, situated respectively in Missouri, Kansas, Texas and Nebraska, do not here call for mention.

HOUSES AT HOMEWOOD.

Twenty years are allowed to purchasers to pay off the price by equal monthly instalments, but the balance may be discharged at any time, 6 per cent. per annum being allowed on advance payments. Rates, repairs and all outgoings must be met by the occupant, who has also as a condition of the contract, to insure his life for the whole sum, the company paying the premiums direct, and collecting them with the instalments.

The houses are of brick and half-timbered stucco, and are erected by the company a hundred at a time, so as to reduce the cost. Special attention is paid to plumbing and baths. The gardens are divided by hedges, and creepers cover most of the houses and their verandahs, so that the back premises are as attractive as the fronts. The roads are macadamized, and a special system of "bacterial oxidation" is employed in the disposal of sewage. The houses have filled well, and together form a pleasing oasis amid desolate surroundings. It is the expressed opinion of the housing experts of New York that only the multiplication of such colonies will afford a solution of the terrible local housing problem.

Marysville.

One more American village alone calls for notice, and that is Marysville, near Fredricton, in New Brunswick, "a kind of Canadian Pullman," erected by Mr. Alexander Gibson, owner of large saw and cotton mills, for his employees, who are "said to be better housed than the population of any other Canadian factory town."

BRITISH Examples.

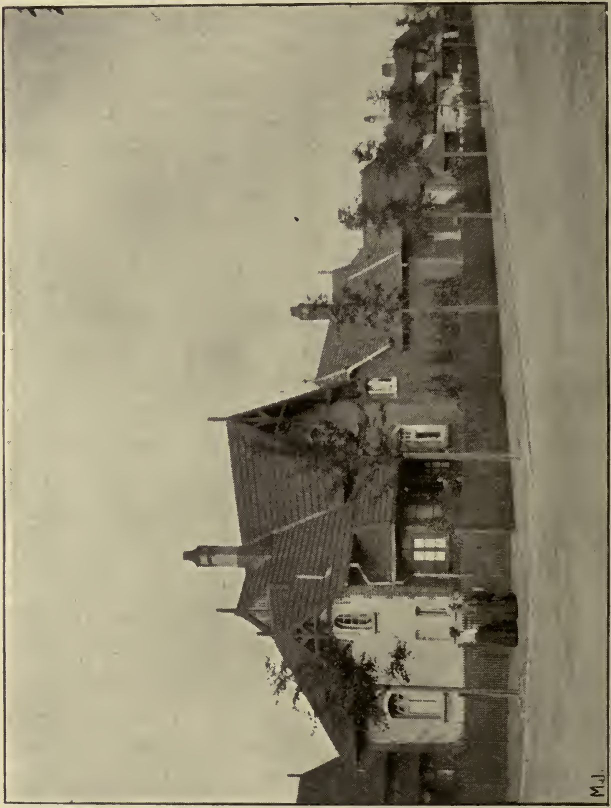
In England the earliest village of the class under consideration was Saltaire, founded in 1853 on the outskirts of Bradford by the late Sir Titus Salt for the 3,000 to 4,000 employees at his woollen mills. Now that our ideals have so far advanced, and we have industrial villages beside which Saltaire is dismal and cramped,

Saltaire.

there is a tendency to disparage the immense stride marked by its construction over half a century ago, just as the improved houses secured by Robert Owen for his people at New Lanark almost as long before would now be looked down upon as quite inadequate for present-day requirements. This, however, is a mistake, as whatever models we can point out to-day are the direct outcome and development of these early pioneer experiments, and of the principles which underlay them.

Saltaire should therefore be approached by the student of industrial housing with feelings of respect and gratitude. In its day it had no rival, and there will always remain about it an air of solid comfort. Would indeed that none of our mill-hands were worse housed than at Saltaire: for that boon we could afford to forego all later achievements. Stone-paved streets, too narrow for our ideas, crossing each other at right angles, unembellished by trees, lead between nearly a thousand neat stone houses, carefully planned, behind which run alleys for the removal of refuse. There is no green or beauty save before some of the larger houses in certain streets, but there is a park of fourteen acres, though the village is cramped into twenty-six. Since the death of Sir Titus Salt, even the former almshouses and wash-houses have been cut up and rented. The other excellent institutions which the founder erected have for the most part greatly deteriorated, if they have not been put to public uses, but there is still no licensed house on the estate.

Of the older houses, one containing a good living-room and scullery with back door opening on to a tiny yard with closet, coal shed and rubbish bin; a pantry under the stairs, and upstairs two bedrooms; lets at 3s. 3d. a week: others as low as 2s. 6d. or 3s. On the main thoroughfare a house with a large front room, kitchen with sink, etc.; cellar with laundry, small



AN ALFREDSHOF STREET.

[*See p.* 368.

yard, etc., and passage; with three bedrooms over (one of them quite small), lets at 5s. 6d. Or the passage width may be thrown into the living-room, which some prefer, the front door opening into it direct, as in the smaller style. All the rooms are of good height.

Bessbrook.

Another once famous village which has sadly fallen off in new hands is Bessbrook, near Newry, in Ireland, built by Messrs. Richardson, who employed about 2,500 workers in their linen mills, started in 1846. About the same age as Saltaire, in arrangement and design Bessbrook is decidedly in advance of it, though there is considerable diversity in the class of cottages, dependent on the date of their construction. Originally, workers residing in the hovels of the district round were attracted by the older houses, and there trained until fitted to occupy better quarters. Thus there was a steady levelling up of the whole population, assisted by the numerous excellent social and educational efforts to which members of the Richardson family devoted themselves.

There is an institute with hall and library: there are numerous handsome places of worship of various denominations, and there is a temperance hotel, but no public-house, though the population is over 3,000. The nearest licensed premises, quite small, are over a mile and a half away, while the next village, Camlough, with a population of 500, is cursed with seven, which owe little or nothing to Bessbrook custom. There are two good squares with public gardens, now neglected, round which stand some of the best houses, of four rooms each, let at 3s. a week. Many with only two rooms let at 1s. 6d., for the standard of wages and living in Ireland is very low compared with that of England. Yet the people are remarkably healthy, and the death-rate is but 13 per 1,000, as compared with 18·2 for the whole of Ireland.

COTTAGES AT STREET.

Street.

A less pretentious and less known village is growing up beside the boot factory of Messrs. Clark at Street, near Glastonbury, though not with any intention to do more than keep up with the demand for house-room, and on no prearranged plan. The various extremely neat and well-designed rows of stone-built cottages nevertheless offer practical examples for others. Rents are from

4s. to 5s. a week for two good rooms and scullery downstairs, and three bedrooms above; all have good gardens undivided by fences, and pleasing backs. Six-roomed cottages fetch 5s. 9d. Some have been sold to occupants, but the majority are simply let. Messrs. Clark, or members of the firm, have erected also a fine village institute, a gymnasium, a library, and a temperance inn. Another English firm adopting a similar plan is that of Messrs. Chivers, at Histon, near Cambridge, but they are only just beginning.

Trafford Park.

The Westinghouse Company of Manchester is sometimes referred to as responsible for a model village of 2,000 houses in course of erection by a sister company on 79 acres forming part of what was once Trafford Park, but this is a venture showing very slight improvements on the old lines, and is, in fact, a lost opportunity. Streets of the familiar little brick houses stand out to the pavement, their front doors opening into the living-room, and though now red, they will soon be grimy. They are, however, fitted with hot and cold water, baths and electric light, at 6s. to 8s. 3d. a week for four or five rooms. Light is 6d. to 9d. a week extra, and later on gas is to be supplied for fuel. There is a central recreation and play-ground, and there are library, club, and baths on the estate. Another venture of the same sort, Vickerstown, exists on the Isle of Walney, opposite Barrow, built for the employees of the great ship-building firm of Vickers, Sons, and Maxim, which owns the land; but this again

Vickerstown.

in many of its particulars is far from model, and does not here call for attention.

Mr. W. P. Hartley, of Aintree near Liverpool, has carried out valuable experiments in industrial housing.

Aintree.

The older is a square of neat cottages with small gardens in front, facing four roads, and surrounding an open garden and playground space. Being satisfied with a 3 per cent. return, Mr. Hartley is able to let these cottages at very low rentals: thus for 2s. 6d. a week a childless couple can have a neat home with big kitchen and pantry, and a bedroom over; or for 3s. 6d. front and back kitchens with two bedrooms and an attic. Another shilling secures a parlour and a third bed-

CHEAP COTTAGES AT AINTREE.

room, with better garden, suitable for a small family; or 5s. 8d. a larger house with a bath-room.

The more recent experiment is Cedar Road, a street of small houses either purchased or in process of being purchased by their occupants by monthly payments of at least 12s. 6d. per £100—to include part-payment of principal and 3¾ per cent. on the price—which spreads the transaction over 18 or 19 years at the most. A seven-shilling-a-week house, with parlour, kitchen, scullery and three bedrooms, costs £250; an eight-shilling house with an extra sitting room and a bath-room costs £300; and there is a nominal ground rent. No deposit is required, but evidence of steady employment and good character is essential, and the intending purchaser must covenant to live in the house himself, neither using it for any other purpose nor subletting it until entirely paid for, without the vendor's consent. In case of default or the bankruptcy of the purchaser, etc., the vendor may resume possession on paying "the difference between the original purchase money and the sum still owing, less a deduction for depreciation for wear and tear of 5s. per cent. per annum during the first five years," and 10s. thereafter, calculated upon the original purchase money and the cost of putting the house into repair as new.

Earswick.

The latest industrial village in England, hardly advanced enough for description yet, is Earswick, now in course of erection by Mr. Joseph Rowntree, about a mile from his works, near York, on an estate of 120 acres with a railway station. This, when fully developed promises to stand in the front rank, for every effort is being made to render the projected 700 cottages models in every respect. The forty-three already standing, many of them occupied, are extremely picturesque and practical; red-brick or white-washed, with French or pan-tiles on their gabled roofs; each having a garden of some 350 square yards. They are let at from 4s. 6d. a week, or 5s. 2d. including a local rate of 3s. 4d. in the pound paid direct by the tenant. Larger houses with sitting-rooms let at £16 a year, not including rates. The larger are semi-detached, the smaller in blocks of four or six. The rents are calculated to pay 3 and 4 per cent.

EARSWICK COTTAGES AT 5s. 9d. A WEEK.

The favourite type, which has very much to recommend it—not the least being the absence of a waste front parlour for the exhibition of antimacassars, hideous prints and mouldy stuffiness—consists on the ground floor of one commodious living room, 20ft. 6in. by 12ft. 6in., with a bay window and plenty of cupboards, out of which open a small pantry, and a scullery fitted with sink, copper and bath. The bath has a drop-lid forming a splendid table, and the copper steam is carried off by an exhaust flue. Upstairs there are three bedrooms with fireplaces, and a large wardrobe on the landing.

COTTAGES AT EARSWICK.

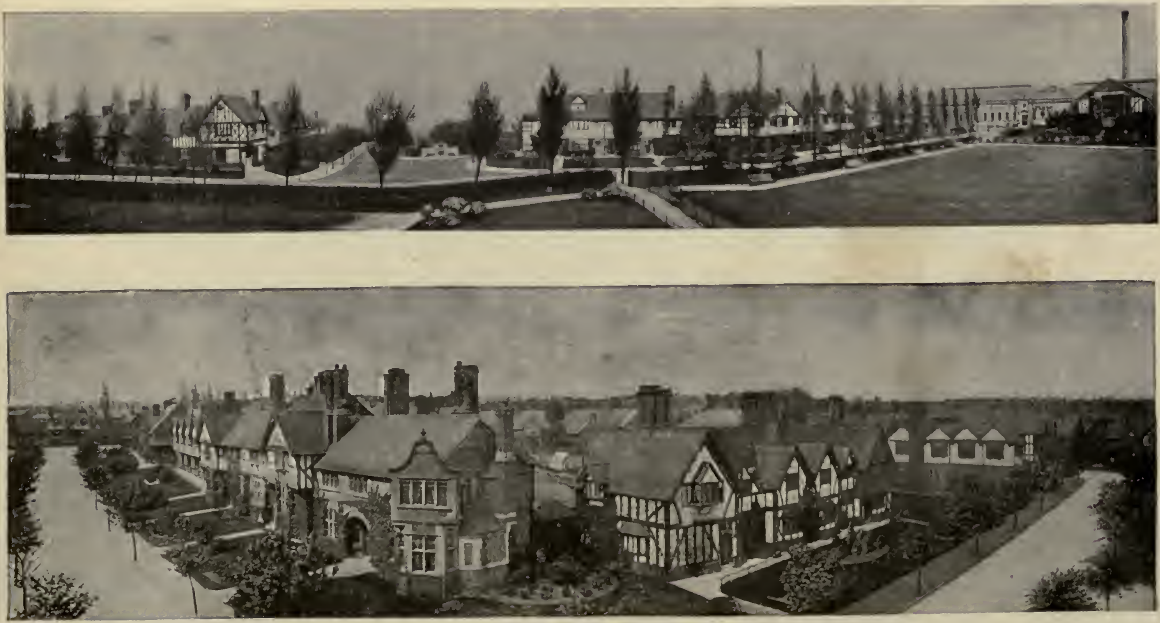
The walls are faced inside with adamant cement, smooth and hard, and picture rails. Gas and water are laid on.

There being no natural fall to the ground, the sewage is pumped up by compressed air and treated in septic tanks and filter beds before passing into the river. The carriage-way of the roads will be only eighteen feet out of about forty, having on either side six feet of grass with trees between it and the footpaths; a much better plan than expensively macadamizing the whole width, and letting it grow weedy. Ample provision is also made for recreation grounds, park, and other open spaces, which, supplementing the gardens, will preserve for ever the rural character of the place. Plans for new buildings have to be approved by a council of thirteen—seven elected by the tenants and six by the trustees—which has charge of all local interests, a method which must from the outset foster civic interest and responsibility.

The village having thus been brought into existence, Mr. Rowntree has made over the estate as it stands to trustees, together with sufficient funds to provide—along with the rents—for the annual addition of twenty to thirty cottages. In principles the conditions of the trust deed follow that of Bournville, to be described later, the most generous catholicity combined with judicious restrictions on the use of the land, but not on the lives of the tenants, who are not confined to Messrs. Rowntree's employees, or even to the labouring class; but good character is indispensable. The agency of the estate is in the hands of a lady worker of great experience and social sympathy, whose influence cannot fail to be beneficial in many ways.

Port Sunlight.

The most ambitious architecturally of existing industrial villages is Port Sunlight, situated a few miles out of Birkenhead, and the unique principle on which it has been created deserves attention. It has been built for the employees of Messrs. Lever Bros., on the principle



PANORAMIC VIEWS OF PORT SUNLIGHT.

aptly described by Mr. W. H. Lever, its founder, as "Prosperity Sharing." To the ordinary profit-sharing Mr. Lever raises the objection that most of the extra money received by the men is either absolutely wasted, personally, or in luxuries which do not materially improve the living conditions, so that the wife and family often fail entirely to benefit therefrom. In place, therefore, of merely sharing its profits with its employees, this firm endeavours to share with them the results of prosperity, by laying aside yearly a proportion of its profits to be invested for the benefit of all, not to be divided among them and then lost sight of.

The capital so provided has been employed in building houses, public institutions, etc., and in laying out a model village for the benefit of the workpeople only, no interest being charged. Thus the occupants of Port Sunlight, instead of paying ordinary rent, have only to provide for repairs and 1 per cent. for a sinking fund, paying the rates direct, so as to secure their votes. This means that the man who can only afford to pay 5s. a week for his house enjoys the use of one worth more like 8s. 6d. a week, or in other words receives from the invested profits of the business a corresponding addition to his wages, in the form of a share in the general prosperity from which every member of his family benefits. The total cost having been over £350,000, were interest charged at 5 per cent. it would only represent an annual bonus to each of the 2,400 employees of between £7 and £8. The actual expense to the firm in loss of interest is about £10,000 a year, but its directors consider

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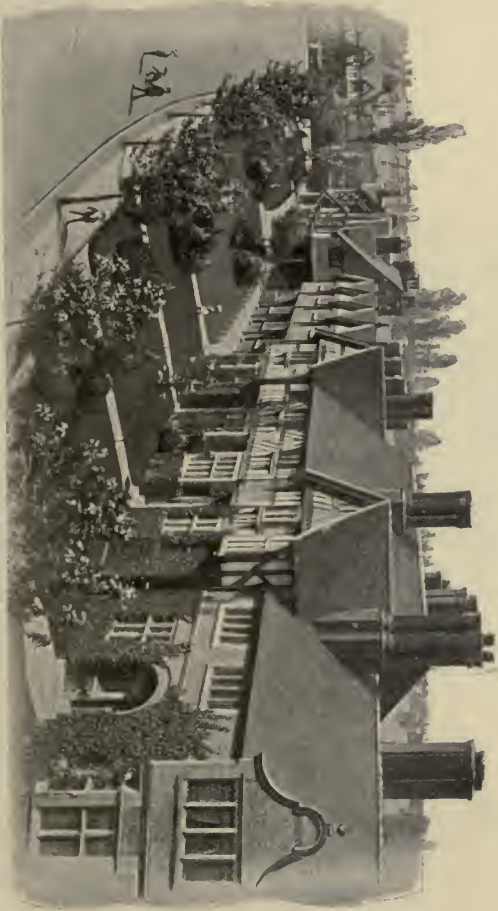


FRONT GARDENS AT PORT SUNLIGHT.

themselves recompensed by the class of workers secured. Without disparaging the older methods of direct profit-sharing, this "prosperity-sharing" has certainly much to commend it, and the system is well worth the attention of progressive employers.

The village of Port Sunlight extends over 140 acres gradually acquired beside the soap-works, and it has about 3,000 inhabitants in 600 houses. It was commenced in 1888 by the purchase of 56 acres at £200 an acre, but it has since materially raised the price of surrounding land, the latest addition to which, an adjoining slum, cost £1,000 an acre. Its four miles of roads vary from 40 ft. to 70 ft. in width, and are all tree-planted, the carriage-way being 24 ft. wide, the pavements 8 ft. to 12 ft., beyond which lie turfed gardens, 18 ft. to 30 ft. wide—making seventy to eighty feet across from house to house. The rule is to make the foot-paths one-third the width of the adjoining carriage-way. In the centre of the estate a dip in the land which was formerly marsh is laid out as a park of twenty-five acres. This and the front gardens are tended by the Company's gardeners, the latter at an average cost of 3d. per week, but for the exercise of personal taste and skill there are ample allotments—let at 5s. per annum for 10 perches, with water laid on—behind the various groups of houses, most of which face open spaces. The death-rate is but 9 per thousand, in comparison with Birkenhead's 17, and Liverpool's 21.

The public institutions of the village include a church, two splendidly fitted groups of schools, a public hall which is a model of convenience and simplicity for any village, a magnificent restaurant, a gymnasium, an elegant open-air bath; tennis, bowling and quoit grounds; a beautiful drinking-fountain; co-operative stores entirely run by residents, and a most attractive inn. Until recently the last-named was unlicensed, but as the result of a vote of 80 per cent. of the inhabitants in favour of a license, this has been obtained. The argument of the women who voted for the proposal was that if their men-folk did want to drink alcohol, they would rather they were able to do so where its sale was not the first object, without having recourse to the usual "pubs" of the neighbourhood.

A PORT SUNLIGHT HOUSE.

The Port Sunlight houses are of chaste antique design, the better ones half-timbered, two to seven of them in a block, and no two blocks alike. They vary in accommodation to suit all families, and to prevent the low rents being abused, the number of inhabitants allowed to each is strictly limited, so that over-crowding is avoided. All are fitted with pantries, bath, and modern sanitary conveniences, and an admirable feature of the designs is that the unsightly "back addition" is entirely dispensed with. After much experience a scale of dimensions for the rooms has been hit upon, any increase or decrease of which is viewed by the occupants with disfavour, as either too large or two small for their furniture. These are, for the all important living-room, about 14 ft. each way, or 14 ft. by 16 ft.

Fifteen years ago the standard type of cottage cost £200 to build: in 1901, owing partly to increased cost of material, and partly to diminished work for the same money, this cost had risen to £330. Taking the average value of the land at £240 an acre, the maximum number of houses being ten per acre, the present cost of house and land together amounts to £354. This, with a charge of 4 per cent. interest, and 1 per cent. depreciation, in addition to rates, taxes, repairs and maintenance, would necessitate a weekly rental of 10s. 6d. to make it pay. It is not therefore at present commercially possible to erect a village such as Port Sunlight for the class inhabiting

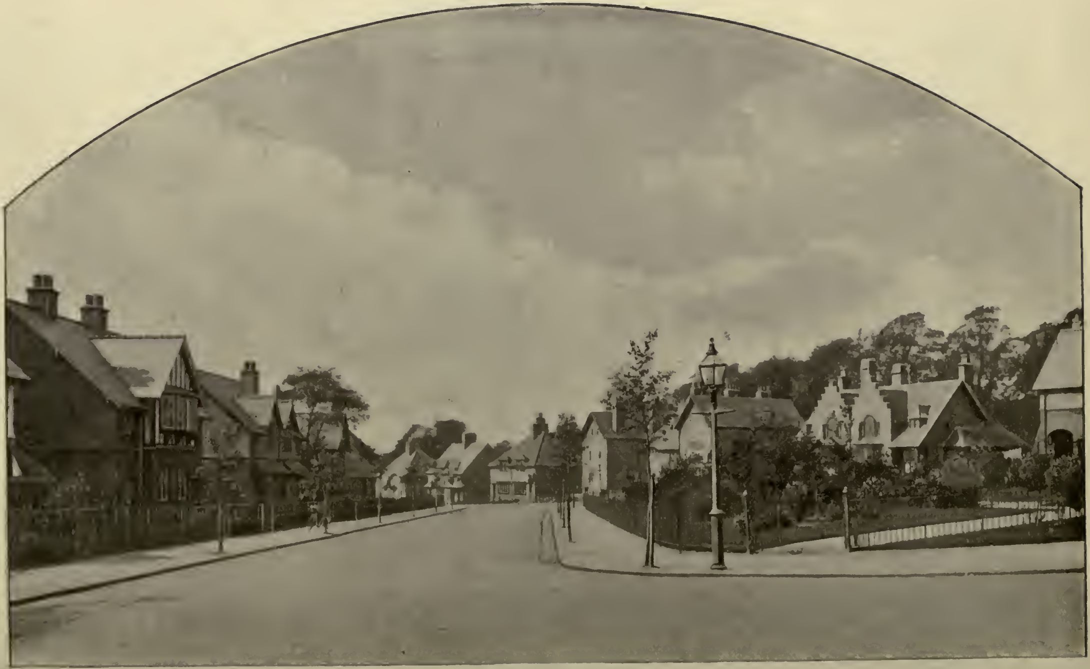
A TYPICAL CORNER, PORT SUNLIGHT.

it, save in pursuance of such a prosperity sharing scheme as that which has rendered it possible here, though if open to ordinary tenants it could easily be made profitable.

Bournville.

An example which can be followed with advantage not only by the private investor satisfied with a reasonable interest, but by public bodies acting under Part III. of the Housing of the Working Classes Act, is that set by Mr. George Cadbury in the village of Bournville. There the houses, though fulfilling all the requirements of a working class family, are perforce more modest, as they have to be let at rentals within the means of their occupants which will afford a reasonable return on the investment. Bournville is therefore the most valuable experiment in industrial housing at present established, and its value is enhanced by reason of the model restrictions placed on the land by its founder.

These are embodied in the deed under which in 1900 Mr. Cadbury presented the whole concern to Trustees for the nation, under the final control of the Charity Commissioners. It was then valued at between £175,000 and £180,000, and the annual revenue was over £5,000. This the Trustees are to employ in completing the present village, and then in the establishment of villages on the same lines outside any large towns. In time, therefore, a most important movement must result from what is already an extremely valuable contribution towards solving the industrial housing problem. It has well been described as "propaganda by deed." One of its



BOURNVILLE.

earliest results was the impetus if not the inspiration given to the Garden City movement, and its latest has been the foundation of Earswick on kindred lines, as already described.

The object of the gift, as defined by the Instrument of the Trust, is "the amelioration of the condition of the working-class and labouring population in and around Birmingham and elsewhere in Great Britain, by the provision of improved dwellings with gardens and open spaces to be enjoyed therewith, and by giving them facilities, should the Trustees think it desirable to do so, for purchasing or acquiring the necessaries of life, and by such other means as the Trustees may in their uncontrolled discretion think fit."

The restrictions on the land which will for ever preserve the rural charm of Bournville are:—

Model Restrictions on Land.

I. "One tenth (exclusive of roads) . . . shall be laid out and used as parks, recreation grounds and open spaces." [In development of this stipulation playgrounds for the children exist or are planned within five minutes of every house.]

II. "Dwellings may occupy about one-fourth part of the sites on which they are respectively erected, the remaining portions to be used as gardens or open spaces in connection with such dwellings."

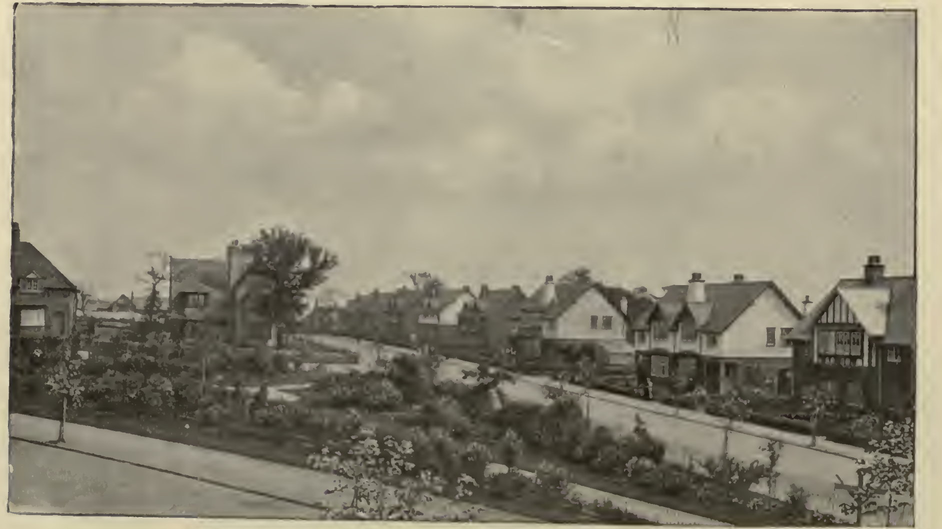
III. "No factory shall occupy in area more than one-fifteenth part of the total area of the estate on which it may be built."

It is urged by the founder "that the rents of such dwellings may, if practicable, be fixed on such basis as to make them accessible to persons of the labouring and working classes, whom it is his desire to attract from the crowded and insanitary tenements which they now inhabit, without however placing them in the position of being recipients of a bounty." The occupancy of the houses is in no way restricted to employees in the Cadbury Cocoa Works, only some two-fifths of the tenants being engaged there, while about as many work in Birmingham, and the remainder in the neighbouring villages.

A picturesque old farm-house on the estate has been adapted as a village inn, to which the only other restriction applies :—

> "None of the houses or buildings . . . shall be used for the manufacture, or sale, or co-operative distribution of . . . intoxicating liquor, except . . . the unanimous consent in writing of all the Trustees . . . shall be given : . . . always provided that all the net profit arising from the sale or co-operative distribution of intoxicating liquor shall be devoted to securing for the village community recreations and counter attractions to the liquor trade as ordinarily conducted, . . . bearing in mind his [the founder's] intention that the sale, distribution or consumption of intoxicating liquor shall be entirely suppressed, if such suppression does not, in the opinion of the Trustees, lead to greater evils."

Mr. Cadbury's first intention had been to sell the sites and cottages outright, thus creating a number of small free-holders, but the difficulty of attaching the desired conditions to such property led to the abandonment of the scheme. Leases for 999 years containing restrictive clauses were next tried, but

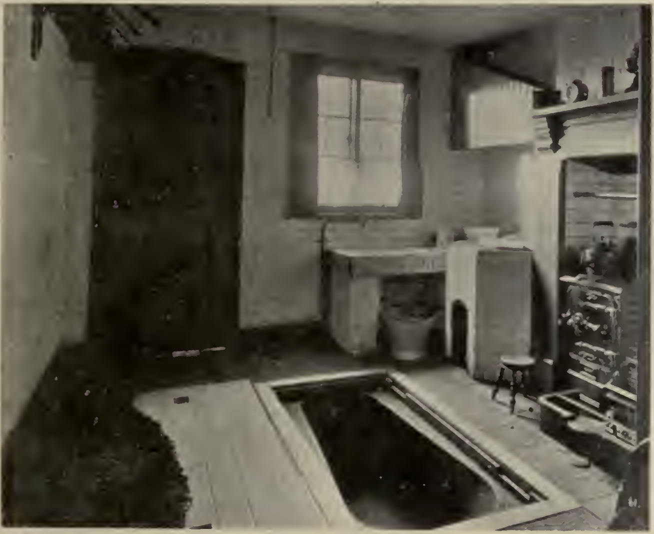


BOURNVILLE : OPEN SPACE.

even these were found open to some objections, with the result that for the present houses and land are only let. Rents are now calculated to return 4 per cent. on the capital invested in them, including maintenance and repairs. Notwithstanding all their advantages, commodious cottages are let on these terms from 6s. 6d. a week, including a local rate of 6s. 4d. in the pound. Ground rent is calculated at £20 an acre which accommodates an average of about eight houses.

Situated only five miles from overcrowded and unhealthy Birmingham, 458 acres have been secured at prices rendering this possible, and Bournville has been designed on model lines, care being taken to create and maintain as much as possible of the picturesque. The tree-planted roads are 42 ft. in width, and generally curved to enhance the effect: they are for the most part named after trees. So far about 500 houses have been erected, each with ample garden, averaging 600 sq. yards, laid out and planted with fruit trees. There are also 200 additional garden allotments, much used by men from less fortunate villages around. Gardening is made a strong point, every encouragement being given to improve methods, including the advice of experienced gardeners and gardening classes. Six gardens tested for a year gave an average weekly return of 1s. 11d., representing a yield of nearly £60 per acre, as the result of spade cultivation in leisure hours. It is a condition of tenancy that the gardens shall be properly kept, but only two have had notice to leave on this account.

The cottages are semi-detached or in blocks of four, and monotony has been avoided by the introduction of great variety into the designs, in charge of which there is a most capable architect. All that are intended for growing families contain a good kitchen-living-room, parlour, scullery, larder and lobby on the ground floor; with one large and two smaller bedrooms over, and a linen cupboard. A special feature is a bath in all new houses, in the cheapest of which it is sunk in the kitchen floor, so that while occupying no floor space at other times, it may readily be used on raising the lid, and filled



BOURNVILLE: COTTAGE BATH IN KITCHEN FLOOR.

or emptied without expensive plumbing to get out of order. In another style of house the bath stands in the scullery, its lid forming a splendid table; but the cheapest plan is to have the bath tip up on end into a cupboard when not in use, and in the better style there is a small bathroom with hot and cold water supplies. In positions where the sun would not otherwise shine into the living-room windows, special projecting windows are placed so as to catch it. Water is always laid on, and all rooms have automatic ventilators. Needless to add there is always a long list of applicants for the houses whenever they may fall vacant, and were they required to pay a higher percentage on the capital, they would easily obtain higher rents.

The public buildings of Bournville comprise a bath-house, where hot or cold baths can be enjoyed for threepence; a school-house for 540 children, to be supplemented by one for 270 infants; Ruskin Hall, originally built for the Birmingham Ruskin Society, but now in the hands of the Village Trustees, with two large halls and smaller rooms, intended for library, reading room, art gallery, and handicrafts school; and a Friends' Meeting House nearly opposite the hall. A Tenants' Committee looks after the general interests of the residents, superintending the play-grounds and encouraging gardening by the co-operative purchase of plants, seeds or tools, or the hire of the last-named. Under their care is a most successful flower-show, while during the winter there are lectures arranged, and a gardening library has been formed. Fowls and bees

BOURNVILLE : CHILDREN'S PLAYGROUND.

are profitably kept by many. A very practical set of health rules is supplied on a card for hanging in the houses, which are well-kept and bright.

Under such conditions it is not surprising that zymotic diseases are hardly known (the death-rate from them being only 0·5), and that the total death-rate is but 7 to 8 as compared with Birmingham's 19·9 (or 40 in certain slums). This means that not only is the average length of life greatly extended, but that the powers and enjoyment of life are proportionately increased, to the immeasurable benefit of the community. Hence the importance of straining every nerve to bring about a national outward movement on such lines from our crowded centres. Nothing else will ever solve the housing problem.

[*See p.* 368

ALFREDSHOF: SEMI-DETACHED COTTAGES.

But it will not suffice to carry the surplus popula-

The HOUSING PROBLEM.

tion outwards without imposing some such restrictions on the use of the land as those laid down in the Bournville Trust Deed. As long as it is possible within the limits of the law to blight our rural suburbs by cramping in forty-five dwellings per acre, where the average should not exceed ten, and a reasonable maximum would be twelve, it is hopeless to expect the general growth of districts like Bournville. We have discovered the necessity of fixing a load-line for our ships: *it is high time to fix a load-line for the land as yet unoccupied by dwellings*, which can be done to the loss of none, and to the gain of all.

I. A load-line on the land required.

And we shall never secure such beauty and convenience for our suburbs until the planning of whole neighbourhoods ahead of their development is placed in the hands of authorities independent of local interests, as is already done with such success on the Continent. In a report of the sanitary condition of the labouring population of Great Britain, presented to the Poor Law Commissioners by Sir Edwin Chadwick in 1842, among many valuable suggestions there is given a plan of the town of Birmingham as it then was, indicating proposals by Captain Vetch as to the lines on which its future growth might be directed on principles of general convenience and utility. Had that sound advice been followed, Birmingham would have by now developed into one of the finest cities of Europe, instead of having become, in consequence of neglect, a straggling patch-work of slums and

II. Foresight urgent.

workshops through which at enormous expense a few fine streets have been driven, surrounded by a belt of comfortable residential districts interspersed with new slums. But the case of Birmingham is typical of almost all our growing manufacturing towns.

The system proposed by Captain Vetch was to strike out new polygonal plans for regulating the future growth of cities, based on actual radiating lines of communication with other centres, the connecting streets forming the sides being parallel, and wherever possible parallel to existing cross roads. A better or more simple method could hardly be devised, save where the contours of hills necessitated deviation from it, and it is high time to adopt it for all growing towns and cities. The American rectangular system has nothing save cheapness to recommend it, and nothing could be more monotonous or confusing to the stranger unendowed with the numerical faculty.

The plan of Wren for the rebuilding of London after the Great Fire, had it been adopted, would have saved most of the expense of subsequent improvements, and would have greatly simplified the housing problem. Nay more, had some such plan for regulating its development been adopted as late as the beginning of the last century, most of the present housing difficulty would have been avoided. It is due entirely to the foresight of a few great landowners, considering their own interests and those of their heirs in the manner in which the community ought to have done, that the erstwhile suburbs of Bloomsbury, Marylebone and Belgravia, or the

A BOURNVILLE STREET.

Hanoverian district of Edinburgh, east of the Castle, possess any uniformity of plan or open spaces at all. Maps of London taken in 1801 and 1901 respectively show that almost all the overcrowded districts of to-day were green grass then, or open suburbs. Has this past no lesson for the present? How long shall we who suffer so much from the neglect of our ancestors continue by our apathy to cultivate worse problems for our descendants?

III.
Adjustment of bye-laws imperative.

As things stand, we apply to new districts bye-laws framed for crowded centres, with the result of encouraging what we ought to avoid. The minimum requirements as to space round the houses have become the maximum on new sites as on old, thus inducing the slum: the requirements as to material and construction essential to close-packed towns are unnecessarily applied to country cottages in their own gardens, and choke off private enterprise, reducing the much needed supply. In fact, to make cottage property pay in the country, what is added by law to the cost of building has to be recovered by curtailing the land or the interior accommodation. *To encourage suburban or rural industrial housing, therefore, it is essential to increase the requirements as to the provision of land per house, and to relax correspondingly the requirements as to construction.*

Another great impediment to the only class of housing that can meet the need is the inducement offered to owners of land in the vicinity of towns or within them to let it lie idle, or practically so, till an increasing population doubles its price, by excusing them from paying rates on its real value. In other words, the house famine is intensified by the same injustice which causes such high rates in town,—the unequal distribution of those rates in favour of unbuilt-on land, which only pays half the agricultural rate.

IV.
Equal distribution of rate-burden necessary.

Until this evil is remedied, even the much-needed development of transit from centre to outskirts only means the transfer of the trouble from one point to another, for with new means of access to work the values of land outside go up by bounds, and speculation at once introduces overcrowding to the legal limit, tending also to raise rents till the worker is but little, if at all, better off under the new conditions than under the old. But *as the only cure for the housing problem is manifestly industrial decentralization*—that is, the scattering of industries as well as the industrious over a wider area than at present,—*whatever retards the decentralization of industries is fatal to the national welfare.*

Powers Possessed.

Even without waiting for such legislation, our local authorities possess adequate powers for present action, especially for the establishment of industrial suburbs on the lines of those described, in Part III. of the Housing of the Working Classes Act, 1890, and its amendments of 1900 and 1903. Its main provisions have been on the Statute Book since they were passed at the instance of the great Earl of Shaftesbury in 1851, but as even yet the general public, and many of those desirous of bringing about improved housing, are unaware of their existence, they need re-stating.[1] The most consoling of them all to many will be the condition that before an Urban District or Town Council can raise a loan under this part of the Act, it must satisfy the Local Government Board that its scheme is financially well-judged and sound, and therefore never likely to become a charge upon the rates.

Part III. of the Housing Act of 1890.

But the application of Part III. has been seriously delayed by its having been made "adoptive"—or in other words, by its being necessary for such local authorities as desire to apply it, to formally adopt it by resolution,—which affords a capital opportunity for interested parties to arrest all action under it, and thus deprive the public of its advantages. The larger centres of population, in which it has been possible to bring independent public opinion to bear, have of course adopted it, but in many of the smaller places where it is no less needed, it remains inoperative, an effect no doubt counted upon by those responsible for the "adoptive" clause. But as housing legislation has never been made a party question, the remedy of this fault, as of others, can only be a matter of time.

The main provisions of this important Part of the Act and its amendments are as follows :

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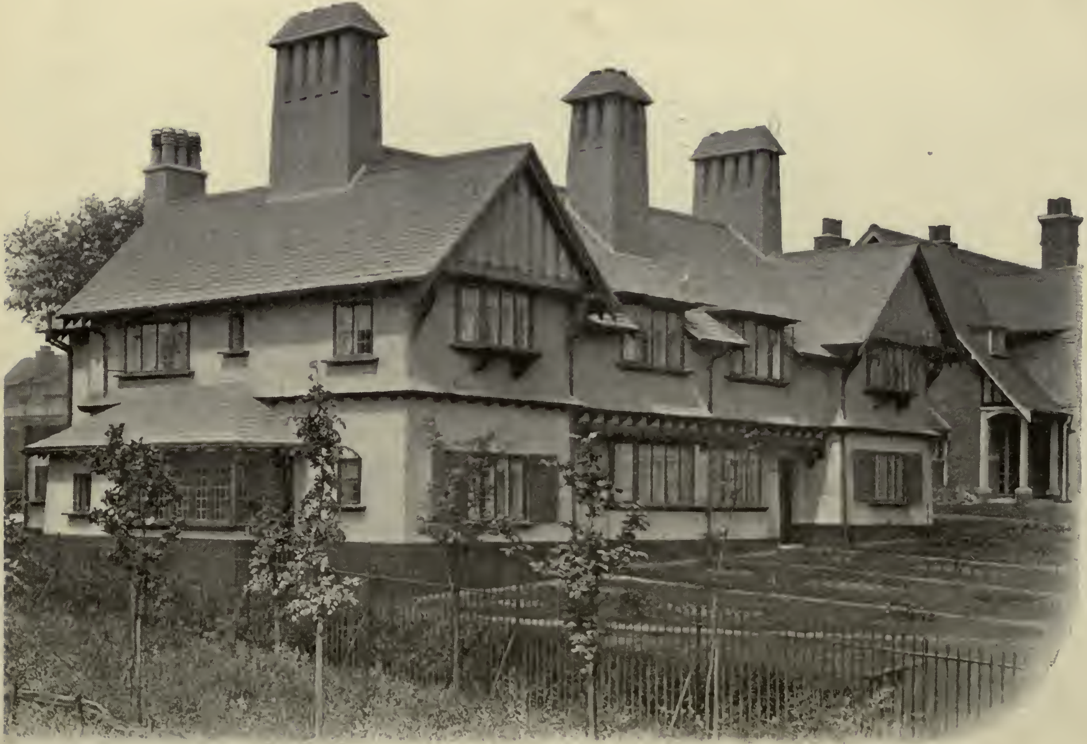
[1] For the text of the Acts, as well as for full particulars regarding urban industrial housing, the reader is referred to Mr. Wm. Thompson's excellent and practical "Housing Handbook," published by Messrs. King and Sons, London, at 2s. 6d.



BOURNVILLE : GROUP OF FOUR COTTAGES : 7S. 6D. AND 8S. 3D. A WEEK.

Main Provisions.

I. Land or houses may be purchased, or houses leased by local authorities, compulsorily if need be, either within or without the limits of their district, for the purpose of providing for present or future housing accommodation for the working classes.

II. Land so acquired may be sold or exchanged if necessary, or it may be leased to anyone, on the condition that working-class houses exclusively shall be erected and maintained thereon.

III. The Public Works Loan Commissioners are empowered to advance money "for the purpose of constructing or improving, or of facilitating or encouraging the construction or improvement of, dwellings for the working-classes,"

(*a*) to any company established for the purpose, or employing persons of the working-classes, or

(*b*) to any private freeholder, or

(*c*) to any holder of a lease of which the unexpired portion is not less than fifty years.

IV. If advantage of these provisions be not taken by private investors, local authorities may themselves

(*a*) build houses for the working-classes, or

(*b*) convert or enlarge existing buildings to provide such dwellings, and

(*c*) furnish such dwellings, if need be.

If after seven years houses so provided are found to be unnecessary or too expensive, they may be sold.

For each cottage so provided there may be a garden of not more than half an acre in extent, or more than £3 per annum in value.

The first three of these provisions render it possible for any number of such industrial villages or suburbs as have been described to be erected in this country, when once public opinion is aroused both to the need and to the possibility of thus supplying it.

The Indispensable Steps.

The indispensable steps, therefore, if we are as a nation to bring about ideal conditions of labour or housing, and so raise the national standard of efficiency, are as follows :

I. To regulate and direct the development of growing towns by empowering and ordering independent authorities, such as County Councils, to plan their growth under expert advice, reserving from the outset ample thoroughfares and open spaces, while land is yet comparatively cheap.[1]

ALFREDSHOF : FOUR-FAMILY COTTAGES. *See p.* 368.

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[1] Instead of the present custom of waiting to buy it up at fancy prices which burden the rates, when already in the building market or even built upon.

II. To limit the housing and factory or warehouse accommodation to be placed in future on land at present unbuilt-on, according to locality, in such a way as to secure for ever a proper environment for all who may dwell or work there.

III. To rate all land at its actual value under the above restrictions, leaving every owner to make his own assessment if desired, on condition that the public may, if need be, purchase at the price so fixed.

IV. Where private enterprise does not meet the demand for house room, the local or other authorities to be compelled to make up the deficiency, under Part III. of the 1890 Housing Act and amendments, on lines that shall not compete with private enterprise, but which shall if possible encourage it.

V. To facilitate this by—

(*a*) simplifying the process of purchasing land by compulsion :

(*b*) enabling building authorities to borrow money for their purposes from the Treasury at low rates of interest :

(*c*) establishing different standards of construction for (1) urban, (2) suburban, and (3) rural[1] dwellings :

(*d*) abolishing the necessity of repaying the value of the land out of the rents, and adjusting the terms for the repayment of the cost of building, etc., to the standard employed, *e.g.*, urban, 100 years, suburban, 80 years, rural, 60 years.

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[1] Where rural cottages stand detached at a sufficient distance from each other, there is no reason why they should not be constructed partly or wholly of wood, if kept in due repair. This would probably in many cases meet the necessity for cheap rural housing, and as those familiar with their use in Northern or Central Europe and North America know, they may be most attractive and cosy dwellings.

Dealing with Public Land.

The fair method of dealing with the land acquired for housing purposes would be for the community to charge the building authorities a nominal ground rent for the term over which the sinking fund on the houses extended, at the end of which it would enter into possession of both, or such ground-rents could, if desired, be sold in the usual way, and under a comprehensive scheme any decrease in value in one part would be more than balanced by increase in value elsewhere, since so long as the population of the country continues to increase, so must the demand for land on which to live, and consequently its value.

PORT SUNLIGHT HOUSES.

Encouraging Private Enterprise.

Of the encouragement of private enterprise under public control to meet a national want, an excellent example is set in Prussia, where the municipal authorities are instructed by rescript[1] to purchase all available land on the outskirts of their districts, and to facilitate the erection thereon of working-class homes *by advancing to builders no less than nine-tenths of the cost, provided that the requisite standard is maintained.* What a transformation such an instruction would work in our own land! It would even pay to offer free sites on land so acquired, if of sufficient extent, for the works of manufacturers or others who would thereby encourage the removal thither of their employees.

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[1] March 19, 1901. See Mr. T. C. Horsfall's "Example of Germany," Manchester University Press, 1s.

The Example of Ulm.

There is probably no more satisfactory example of public authorities attempting to cope with the dwelling famine than the case of Ulm, the population of which is 43,000. Having experimented more or less successfully for a number of years with tenement houses and the assistance of a joint-stock company, in 1894 the town inaugurated its present policy of the wholesale purchase of land for housing purposes, and the erection itself of semi-detached cottages provided with gardens. Strict conditions are attached to the sale of land and houses, reserving to the town the right of pre-emption, so as to prevent speculation, while securing any increment in value; and the maximum rents are fixed to prevent usurious use. Purchasers, who must be heads of families, pay ten per cent. in cash, with 3 per cent. interest on the balance, and 2½ per cent. sinking fund. Normally the purchase is complete in twenty-three years, but when half the price is paid off, payments on this account may cease if desired, and they are postponed in case of illness.

These houses are not provided in a suburb apart

BOURNVILLE: A TYPICAL VIEW.

but in districts in which the Council proposes to build also middle-class dwellings. Of the whole area only 20 per cent. is covered by buildings, the open 80 per cent. consisting of: back gardens and yards 50 per cent. of the whole, 13 per cent. front gardens, and 17 per cent. streets. Out of 1,128 acres within the town limits, nearly 700 acres, or over three-fifths, now belongs to the town and its public institutions; and *nine-tenths of its cost has been recovered by the sale of one-sixth* of the original area purchased; at prices which enabled wholesome restrictions to be placed on the use of the land, whether for housing or industrial purposes. Further, in buying up disused fortifications and setting free land on which building was formerly prohibited, the town secured powers to recover from the owners of the land so improved a fixed charge of from £12 to £125 per acre, according to its increase in value. The purchase of land still continues, but only in such a way as not to unduly force up land values.

Unearned Increment.

The recovery by the ratepayers of the value added to the land or buildings by improvements made at their expense must be an essential feature of any comprehensive scheme of urban development, as only by that means can justice be done to all, and payment made proportionate to profit. It is a serious mistake to open a public space, whether park or road, or to extend means of transport, without exercising the forethought of Ulm, in obtaining powers to secure for those who have created it the increment of values in the neighbourhood. It would not be necessary to disturb the present occupants, or to cause their removal by an immediate demand for payment. All that is required is to agree as to the present unimproved value of such land and buildings, and to grant the public the right of pre-emption at that price whenever the owner desires to sell or lease. Both parties would then in due course reap all that belonged to them; nothing more is required. The public would be under no necessity of buying or leasing the land; it would simply receive the margin of profit added by its local improvements, either in the form of a cash payment or the corresponding increase in the value of the lease. The price thus reached would be the assessed

ALFREDSHOF: SEMI-DETACHED COTTAGES. *See p.* 368.

value at which it would thereafter be empowered to purchase, and on which it would charge its rates. In many cases it would be quite as much to the advantage of the public to retain a high-class residential belt of gardens around its open spaces, thus securing breadth and openness, as to force the land on the market for the erection of hideous flats.

Housing the Poorest.

The most difficult phase of the existing housing problem is the provision of proper homes for the very poorest. It has been shown how the better class artizans can be properly housed on the outskirts on a paying basis, without State financial assistance; but as matters stand at present it is almost impossible to do as much for the unskilled and casual workers who form such an alarming proportion of our citizens, and whose wages are insufficient to command adequate accommodation. It is therefore the more urgent to facilitate the removal from the crowded centres of all for whom provision can be made elsewhere, that urban sites may be freed from their fictitious values, and there may be room to deal effectively with the submerged. Houses now occupied by the removable class will thus be rendered available for them, and clearances of slums may be effected on very different terms from those now commonly arranged. But no final solution of this phase of the problem can be hoped for till the lowest regular wages are sufficient to include the rent of proper houses. It is not right that any but the sick or the aged should be housed, any more than fed, at the public expense. Such a practice would only represent a part-payment of wages, and therefore a tax favour of employers.

Slum Clearances.

The greatest mistake made by those whose sympathies are suddenly drawn to the ill-housed masses is to suggest the immediate clearance away of the slums. Some houses must doubtless be at once condemned as absolutely unfit for habitation, but the cost of their removal, and the loss entailed by reasonably limiting the number to be housed on their site, should be borne by those who have made undue profit out of the necessities of their occupants: it must not be allowed to come on the rates, as it too often does when action is taken under Parts I. and II. of the Housing Act. And it must always be remembered that as long as such houses are homes, they cannot be destroyed without rendering their inmates homeless: clearing

BOURNVILLE: CHEAP COTTAGES.

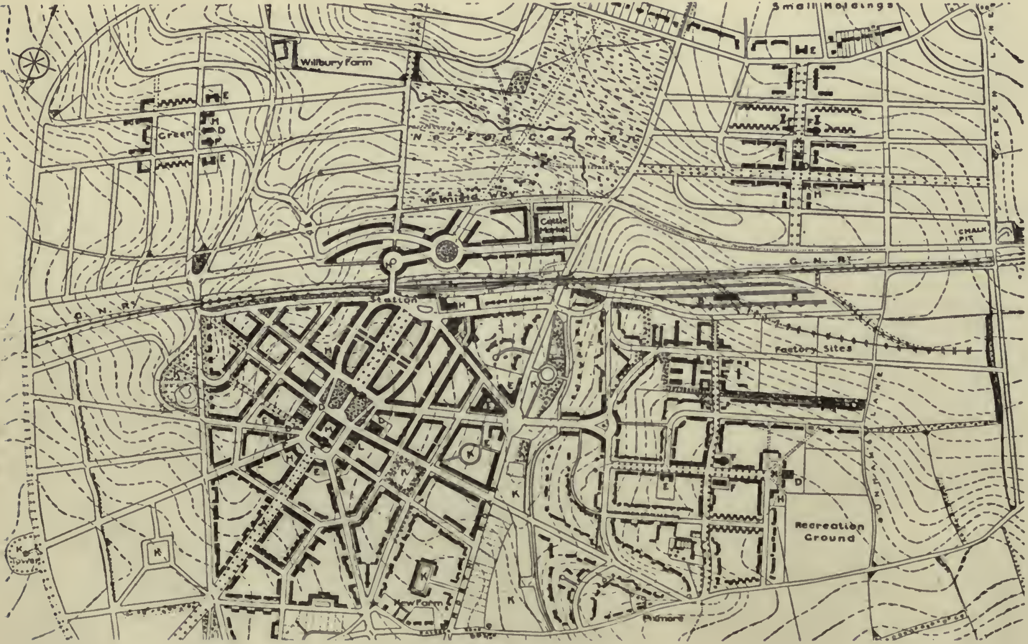
the worst spots in an overcrowded district only increases the evil in the surrounding belt, while until fresh homes have been provided, many of our sanitary regulations must perforce remain inoperative, since to enforce them would be to render hundreds of thousands homeless.

Letchworth *Garden City.*

The first step, therefore, towards the solution of this great problem must be the provision of proper homes for those who can pay for them, either in model industrial suburbs or villages, or in new localities, such as the Garden City now in course of erection at Letchworth in Hertfordshire, where nearly 4,000 acres have been secured at a cost of little over £40 an acre, to establish a manufacturing and residential town on lines by which the increased value of the land will be reserved for the advantage of the inhabitants. The initial capital required for the purchase and development of the estate has been raised by a company—First Garden City, Ltd.,—dividends being restricted to 5 per cent., all above that going to improve the property, to which the company is bound by its articles of association. The intention is ultimately to hand over the estate to trustees, either on behalf of the shareholders, or of the community if it decides to buy the shareholders out. Land is leased either for ninety-nine years at a fixed ground-rent, or 999 years with a periodically revised rent.

EXPLANATION OF LETCHWORTH GARDEN CITY PLAN.

A. Main Avenue.
B. Goods Station and Sidings.
C. Central Square.
D. Site for Public Hall, Institute, Museum, etc.
E. Site for School, etc.
F. Site for Place of Worship.
H. Site for Hotel.
K. Open Spaces.
L. Site for Post Office.
M. Site for Municipal Buildings.


Wilbury Farm
Small Holdings
Green
Norton Common
Icknield Way
Cattle Market
Station
G. N. Ry.
G. N. Ry.
Factory Sites
Chalk Pit
Green Lane
Recreation Ground
Tower
New Farm
Pixmore

PLAN OF LETCHWORTH GARDEN CITY.

The total area allotted for the town-site, including an open common, is but about 1,200 acres, or less than a third of the estate, and as a population of only 30,000 is to be provided for (apart from perhaps 5,000 more in the existing villages and on the farms), there can be no fear of over-crowding. It works out at about 23 persons per acre in the town, or 9 on the whole estate. Public spaces will be ample. The central avenue is to be 150 feet wide, and no roads for traffic less than 45 feet; all tree-planted, the varieties including many new for this use in England. Tall trees are planted to screen the factories, and hedges are used throughout instead of fences, which may only be temporary. The smallest houses must occupy a twelfth of an acre,[1] and all plans must be approved by the Company's surveyor. Parts are reserved for better class residences, with adjacent golf links, and the town will be for ever immediately surrounded by an agricultural belt which will make it an ideal *urbs in rure.*

To enter here into details concerning the progress of so steadily developing a project would be out of place, but it may be mentioned that the first year's occupancy of the land has seen the erection of extensive water-works, with several miles of mains, and the laying of some miles of sewers, while gas-works are nearing completion; roads have been made, railway sidings provided, a permanent station arranged for, and postal and telephone facilities established. A public hall to meet the educational and social needs of the first inhabitants is shortly to be built, a historic residence has been converted into an hotel, and a licensed public-house handed over to the People's Refreshment House Association.

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[1] Which, allowing for roads and other open spaces, means in no case will there be more than ten houses to an acre.

SEMI-DETACHED COTTAGES AT LETCHWORTH GARDEN CITY LET AT 5S. 9D. A WEEK.

Terms of Lease.

All this has been necessary to prepare the way for building factories and dwellings, that the trying experiences of American settlers in predetermined towns may be avoided. Intending residents are now enabled to lease their lands and commence operations assured of the essential conveniences of modern life from the outset. The terms on which leases are granted include, in addition to the usual undertakings as to the maintenance of the property in good repair and state of decoration, agreements to keep the gardens, etc., in "proper, neat and ornamental order," and in the case of factories, that all furnaces shall consume their own smoke: in addition to the usual restrictions as to the use of the premises leased is the condition that no part of any building shall be occupied by day or night so as not to allow 500 cubic feet of air to each adult, and 250 cubic feet for each under sixteen. The strictest supervision is also exercised over all building plans, including architectural designs, over drainage, and over all matters essential to the maintenance of the highest standards of health, beauty and convenience. Happy they whose good fortune it will be to become residents, whether employers, employed, or neither, in a land so full of promise: theirs also in a measure the responsibility of making a success of this great national experiment, which ought to lead to endless repetition, to the vast improvement of the existing conditions of life and housing.[1]

Proposed **Hampstead** *Garden Suburb.*

Stimulated thereto by this more ambitious project, an effort is now being made to establish just outside the London boundary, adjoining Hampstead Heath, a garden suburb which shall embody many of the principles here laid down. An option of purchase has been obtained by an influential committee on an estate of

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[1] Regarding the Garden City movement all details may be obtained of the Secretary of the Association, 350, Birkbeck Bank Chambers, Holborn, London, W.C. Prospective residents or shareholders in the Letchworth enterprise should communicate with the Secretary of the First Garden City Co., Ltd., at the same address. As is well known, the materialization in this experiment of theories long in the air has been due to the publication by Mr. Ebenezer Howard of his "Garden Cities of To-morrow" (Sonnenschein, 1s.), out of which the present movement arose.

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240 acres, beautifully situated, with direct railway access to the West End shortly to be opened. Extending over about a mile-and-a-half in length, by a third of a mile in width, a newly-added tongue of public land runs lengthwise into it. This end it is proposed to develop on the usual lines for high class residences, leasing some 115 acres containing the most desirable sites at so much more than the average cost of £470 an acre[1] that the remaining 70 acres

PAIR OF PIONEER HOMES AT LETCHWORTH GARDEN CITY.

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[1] Nearly £1,000 an acre for the 185 acres actually available for building purposes, after deducting 55 acres for open spaces and adding the cost of converting them into roads and gardens, say £70,000.

may be reckoned as costing only £150 an acre, and thus be available for industrial housing.

"By these means," say the promoters,[1] "houses will be arranged of every rental from 6s. 6d. a week to £400 per annum, with separate gardens from the tenth of an acre to three acres, and common gardens for co-operative dwellings. It not being the object or the intention of the Garden Suburb Trust to make money, every acre which fetches a large price will release, as it were, other acres to be devoted to the erection of cottages for the industrial classes, always providing that the fundamental principle be complied with, that the part should not spoil the whole, or individual rights be assumed to carry the power of working communal or individual wrongs." Every effort will be made to preserve and increase the natural beauty of the spot, and only such buildings will be permitted as will add to its attractions.

It is proposed to form a company or trust to develop the estate on these ideal lines, the capital being raised by the issue of 4 per cent. debentures, or 5 per cent. shares the interest on which will be deferred till the money is earned, but cumulative. All profit beyond this will be devoted to the improvement of the property or to the furtherance of similar enterprises. Whether such a proposal meets with the support it deserves, or whether all its hopes are fully realized, or not, its mere outline furnishes a practical lesson in the development of existing towns, and the success which is earnestly to be hoped for it should lead to its imitation all over our land.

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[1] Particulars may be obtained of the Honorary Secretary, Mrs. Barnett, Toynbee Hall, Whitechapel.

Suggestions for Garden-City Building.

Gathering together the best methods seen in all the model villages described, and in most of the model towns of the world, in conclusion a few suggestions are here offered to any who may contemplate the building of garden cities. There is no reason why our great landowners should not combine with our financiers—who are so glad to borrow their names— in thus developing their own estates on lines which would be the salvation, not only of their own fortunes, dwindling under a decaying agriculture, but also of our working classes, the national backbone.

PORT SUNLIGHT : NEW CHESTER ROAD.

Wherever the nature of the ground and other conditions permit, the principle on which the plan of a model town should be designed is that of radiating thoroughfares—not necessarily straight. The central portions should be devoted to public and business purposes, the outskirts to manufacturing concerns and the homes of the working classes ; the intermediate district to better class residences. A limit should be fixed from the outset beyond which the land might not be cut up for housing purposes, though large residences, farmhouses, and agriculturists' cottages, as well as public institutions, especially hospitals, sanatoria, etc., could stand in the " agricultural belt."

Wherever possible it would be a great advantage if the railway station could be made the centre of the town, situated, when practicable, in an open cutting which could be bridged over at the ends and at road crossings.

The station, set round with trees and shrubs, should be surrounded by the Central Place, round which sites should be reserved for Town Hall, Municipal Buildings, Court, Police and Fire Stations, Library with Museum and Picture Gallery, Public School, etc. A tramway should encircle this focus of public life.

From the Central Place eight main avenues should radiate as nearly as the surface contour permits, N., N.W., W., S.W., S., S.E., E. and N.E. ; and should be named accordingly " Northern Avenue," " North Western Avenue," etc. These should be of sufficient width for tram-lines on a grass strip down the centre, with trees on either side of them, as well as on the edges of the foot-way, making four rows of trees. (If found impracticable on all, then this grass strip should ornament the N., S., E. and W. Avenues, on which alone trams might be needed, gravel for promenades taking its place on the alternate avenues.) All thoroughfares should have trees on either side, set far enough apart to allow free growth, and alternately right and left. Only handsome buildings should be permitted along the avenues.

At suitable intervals cross-streets should be run *at right angles to the avenues*—and therefore either curved or with obtuse bends, according to land contour,—to be numbered successively "First Street North, (*i.e.* on Northern Avenue), 2nd Street W., 3rd Street S.W., 4th Street N.E.," and so on Avenues should be numbered from the centre outwards: streets from the left to right of any one standing at the centre.

Shops and offices should be permitted only in the first few rows of streets, to begin with only in the first, then in the next, till each of those allotted to trade is filled up. Leases or sales of plots would include an agreement to erect a certain class of building within a specified period.

Next to the business streets, and at such intervals beyond as might prove advisable, there should be wider streets similar to the avenues, known as "Circles" or otherwise, whether they approach this form exactly or not.

One of these circles should be so planned as to leave island plots at the junctions with the avenues, for churches and other public buildings voluntarily erected, for which the sites should be allotted free, on the plans being approved. This circle might be laid with a tram-line connecting those on the various avenues, transfer tickets being issued at one fare between any two points in the town.

Although the whole plan should be laid out from the beginning, only the centre and one or two of the radiating sections should be developed at a time, so as to secure concentration and minimize expense. Each section containing representatives of all classes, this would be rendered easy.

In planning public works, such as water, lighting, locomotion, power, drainage, etc., the original plans and land reservations should provide for the requirements of the total population contemplated, but as far as possible they should be so contrived as to be carried out in sections, in proportion as the population and demand grew. That is to say, in such a manner that no extension should render anything already done inconvenient or useless.

In laying out the streets, the tree planting should be carried on as far as possible at the very beginning all over the site, to secure equal growth throughout. Then, when the turn of each street came to be made up, the work should be done thoroughly at the outset, water, lighting and drainage connections being laid to every lot, to prevent subsequent disturbance and expense. If possible, one accessible channel should be employed to lay all necessary pipes and wires, or as an alternative these should reach the houses by back alleys, intended for service traffic only, though the mere existence of such alleys has decided disadvantages. In any case, conduits, etc., along thoroughfares should lie beneath grass strips, sewage on one side, and supplies, with perhaps surface drainage, on the other.

In disposing of lots, stipulations should be made as to the class of dwelling or other buildings to be erected on each, so that harmony might be maintained, all designs to be approved by a special committee of artistic judgment—not necessarily architects—who should have the power to veto any design—including shop-fronts—out of harmony with the general scheme of the street or avenue for which it was intended ; and to suggest modifications. This task would be quite apart from that of a Building and Sanitary Committee or Officer, on whose duties it would not encroach.

This or a sub-committee should also control the designs for all public erections or signs, advertisements, lamp-posts, overhead wire posts, seats, shelters, etc., to prevent their becoming the usual eyesores. Attention would also be paid to the artistic lettering of name plates, notice boards, etc., all of which are of importance in the "city beautiful" it should be possible to create. Inexpensive simplicity would commend itself to all in place of the usual elaborate ugliness.

Factory sites would naturally be allotted alongside of the railway, but should not be permitted within the residential zone, thus giving a town with central station an elliptical rather than a circular shape. In granting sites for factories it should be stipulated that besides their designs being approved by the Artistic Committee—which, being practical, would not demand unnecessary outlay, only taste in what was done ;—that they should be surrounded by trees and grass or shrubs on extra land allotted for that purpose only, and that creepers should be cultivated on all their walls. The employment of smoke-consuming devices should be made compulsory in factories, and if possible in kitcheners. Every effort should be made to include in the original public works a plant for the supply of power-gas to workshops as well as electricity, unless water facilities enabled the latter to be the more cheaply produced. Lighting gas should be dispensed with if practicable. As far as possible a bath should be stipulated for in every house.

FRONT GARDENS AT HOPEDALE. *See p.* 407.

No front dividing walls or fences should be permitted to the gardens before the houses in any part of the town. This is a most important point, as it at once doubles the apparent width of the roads, providing graceful sweeps of green and colour on either side, producing the appearance of houses built in a park. Open iron fences with gates between the houses will prevent unauthorized access to the back premises and gardens, and low hoops of wires a foot above the ground will effectually prevent trespass or the "cutting off" of corners. This would not, however, apply to detached houses standing back from the road in their own grounds, with natural hedgerows in front, but only when they approached the building line. No existing trees or hedges should be disturbed unless unavoidable, and existing lanes should be retained as far as possible.

In the artizan streets plots should be set apart at intervals, if possible one in every street, as playgrounds for the children, who need not then play in the streets. Part should be turfed, part asphalted,[1] and the whole surrounded with trees or climbing plants.

Even in the artizan streets no more than four houses should be permitted in one block, and the Bournville standard of gardens at least three times the size of the house should be adopted. For those unable or unwilling to cultivate their own gardens, houses could be arranged round public gardens, playgrounds or allotments, the requisite proportion being thus maintained. The number of floors and rooms should also be limited.

While such precautions would effectually preclude future overcrowding of buildings, where the local laws against the overcrowding of rooms by occupants, especially at night, are insufficient, or for any reason inoperative, it would be further necessary to prescribe a limit to the number to be permitted to sleep in any house or any room. This would, of course, necessitate the removal of growing families to larger houses, and eventually, when the limit was reached in all directions, to a steady flow of surplus population to other districts, but by no other means can the immeasurable evils of overcrowding—moral, social, physical, and intellectual—be permanently avoided. The human plant needs space to grow in, as well as a full share of sunlight and air, even more than do vegetable growths, yet no gardener hesitates to thin out and transplant when once the limit is reached consistent with all round development. This is no hardship, either to those who go or those who stay; it is the fundamental law which has peopled all the corners of the habitable Earth. And who so likely to spread the benefits of the Garden City Movement as those who, having enjoyed the practice of its principles, find themselves under the necessity of emigrating. It will be the story of our go-ahead colonies over-seas repeated.

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[1] Gravel would appear more suitable to some of us, but to the working man it has the insuperable disadvantage that it wears out boots.

These and other necessary restrictions should be placed on the land by granting it only on lease. If thought advisable the actual rent could be limited, and sub-letting prohibited, but this could be done only for short periods. Whatever form of lease be adopted, though practically amounting to a freehold subject to the restrictions suggested, its terms should reserve to the community all increase of value due to the establishment thereon of that community. Its palmy days will then approach as it begins to overflow.

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(5,000) = Number of employees; m = male, f = female

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